minerva

D Btx ★ 32700 #

SERVICE MANUAL

CUC 4635/4620

Service Manual CUC 4635 Sach - Nr. 72010 - 003.30
Service manual CUC 4635Order - No. 72010 - 003.30
Manuale di Servizio CUC 4635 N. di 72010 - 003.30

D

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Service Manual 1. Ergänzung CUC 4635 Sach Nr. 72010 - 003.31
Service manual 1. addition CUC 4635 Order - No. 72010 - 003.31
Manuale di Servizio 1° completamento per CUC 4635
N. di ordinaz. 72010 - 003.31

12 / 88 AUSZUG AUS ERSATZTEILLISTE CUC 4635

SACH-NR. 29701-056.18/23/25/26/30/32/33/37/38/39/40/41

Pos. Nr. Pos. No.	Abb Nr. Fig. No.	Sachnummer Part.No. Références No. ordine	Anz.	BEZEICHNUNG Ⓓ DESIGNATION Ⓕ	DESCRIPTION (GB) DENOMINACION Ⓔ	DENOMINAZIONE Ⓘ
0001.000		29504-101.06		CHIP-KABELTUNER	CLIP-CABLE TUNER	TUNER PAR TV CAVO
0002.000	X	29504-102.48		ZF-NICAM (23/25/26/33/40)	IF-NICAM	FI-NICAM
0002.001	X	29504-102.12		ZF-VERSTAERKER (25/26/30/32/37/38/39/41)	I.F. AMPLIFIER	AMPLIFICATORE FI
0002.002	X	29504-102.13		ZF-VERSTAERKER (25/26/30/32/37/38/39/41)	IF AMPLIFIER	AMPLIFICATORE FI
0002.003	X	29504-112.12		ZF-VERSTAERKER (GB) F. (18)	IF AMPLIFIER	AMPLIFICATORE FI
0003.000	X	29504-105.23		FARB/RGB (18/23/25/26)	COLOUR/RGB	COLORE / RGB
0003.001	X	29504-105.26		FARB/RGB (18/23/25/26)	COLOUR/RGB	COLORE / RGB
0003.002	X	29504-105.31		FARB/RGB (S-VHS) (30/32/33/37/38/39/40/41)	COLOR/RGB (S-VHS)	COLORE / RGB (S-VHS)
0004.000	X	29504-107.74		ABLENKUNG (110) (25/26/37/38/39/40)	DEFLECTION	DEFLESSIONE
0004.001	X	29504-107.73		ABLENKUNG (18/23/30/32/33/41	DEFLECTION	DEFLESSIONE
0005.000	X	29504-108.33		VIDEOTEXT VT4005(23/25/26/30/33/38/40	VIDEOTEXT VT 4005	TELEVIDEO
0005.001	X	29504-108.31		VIDEOTEXT VT4005(23/25/26/30/33/38/40	VIDEOTEXT VT 4005	TELEVIDEO
0005.002	X	29504-108.05		VIDEOTEXT VT 3805 (37/41)	VIDEOTECT VT 3805	TELEVIDEO
0005-003	X	29504-108.07		VIDEOTEXT VT 3805 (S) (37/41)	VIDEOTEXT VT 3805 (S)	TELEVIDEO
0005.004	X	29504-108.41		FASTEXT-DECODER VT 4416 (18)	FASTEXT-DECODER VT4416 (18)	FASTEXT-DECODER VT4416 (18)
0006.000	X	29504-104.08		NF-STEREO (2X35W)	AF-STEREO	BF-STEREO
0007.000		29303-418.06		BUCHSENGEHAEUSE (32/39	BUSHING HOUSI	PRESA MOBILE
0012.000		29624-815.01		ABDECKUNG	COVER	COPERTURA
0013.000		09621-113.02	2 X	SICHERUNGSHALTER	FUSE HOLDER	SUPPORTO FUSIBILE
0017.000		29304-060.55		EURO AV-BUCHSENPLATTE	EURO-AV-SOCKET PLATE	EURO/SCART-PIASTRA
0017.001		29303-119.05		PERI-BUCHSE	PERI-SOCKET	PRESA PERI
0017.002		29700-362.01		BUCHSENPL.AUFNAHME	SOCKET PLATE (REC.)	PIASTRA PRESA (REGISTR.)
0018.000		29303-364.51		TUNER AUFNAHME KPL.	TUNER HOLDER	SUPPORTO TUNER
0018.001		29303-364.01		TUNER AUFNAHME KPL.	TUNER HOLDER ASSY.	SUPPORTO TUNER
0022.000		29303-156.03		GLIMMERSCHEIBE	INSULATING WASHER	RONDELLA IN MICA
0023.000		19136-005.97	2X	LAUTSPRECHER	SPEAKER	ALTOPARLANTE
0024.000		19146-038.97	2X	LAUTSPRECHER (ST 70-460 S)	SPEAKER	ALTOPARLANTE
0025.000		19104-029.97	2X	HOCHTON-LAUTSPRECHER	TWEETER	ALTOPARLANTE TONI ALTI
0026.000		29501-066.30		BEDIENEINHEIT	CONTROL UNIT	UNITA COMANDI
0027.000		29501-066.42		BEDIENEINHEIT (ST70-466NIC,ST63-466 NIC	CONTROL UNIT	UNITA COMANDI
0028.000		29304-013.99		LED-PLATTE	LE DIODES BOARD	PIASTRA LED
0029.000		29501-074.01		BEDIENENHEIT (ST70-460 GB)	CONTROL UNIT	UNITA COMANDI
0030.000		29501-074.04		BEDIENEINHEIT (ST70-460 NIC)	CONTROL UNIT	UNITA COMANDI
0031.000		29501-074.07		BEDIENIENHEIT (ST70-460)	CONTROL UNIT	UNITA COMANDI
0032.000		29501-074.08		BEDIENEINHEIT (ST70-466S/NIC)	CONTROL UNIT	UNITA COMANDI
0033.000		29305-017.02		LED-PLATTE	LE DIODES BOARD	PIASTRA LED
0034.000	⚠	29304-065.51		NETZSCHALTEREINHEIT	POWER SWITCH UNIT	UNITA ´ COMMUTATORE DI RETE
0035.000	⚠	29703-291.22		NETZSCHALTER	MAINS SWITCH	INTERRUTORE DI RETE
0036.000		29304-070.40		BR-PLATTE 45 AX	BR-PLATE 45 AX	BR-PIASTRA 45 AX
0037.000		29305-021.01		NICAM-DECODER	NICAM-DECODER	DECODER-NICAM

ÄNDERUNGEN VORBEHALTEN - ALTERNATIONS RESERVED - CON RISERVA DI MODIFICHE - TOUS DROITS DE MODIFICATIONS RESERVES - CON RESERVA DE MODIFICACIONES

Pos. Nr. Pos. No.	Sachnummer Part number Références No. ordine	BEZEICHNUNG (D) DESCRIPTION (GB) DENOMINAZIONE (I) DESIGNATION (F) DENOMINACION (E)
C 671	8650-081-111	HV-KERKO 270PF 20% 2KV
C 226	8684-367-133	KERKO.5 2200PF 20%
C 331	8684-367-124	KERKO.5 1000PF 20%
C 372	8415-161-126	ELKO GRM 22UF 25V
C 507	8452-996-147	ELKO CB 1000UF 25V
C 511 ⚠	8515-909-035	KF 35 9000PF 3,5% 1600V
C 512	8515-909-006	KF 72 0,027UF 5% 400V
C 513	8515-942-131	FKP 2/I 1800PF 5% 100V
C 514 ⚠	8515-909-008	KF 8 150PF +0/-10%
C 516 ⚠	8525-041-185	MKC 4-SV21 0,33 UF 5%
C 521 ⚠	8515-722-231	KF 22 0,26 UF 5% 160V
C 522 ⚠	8515-909-022	KF 22 0,26 UF 5% 160V
C 525	8605-767-111	SSPN 560PF +50-20% 400V
C 527	8426-099-049	ELKO GR 47UF 250V
C 528 ⚠	8564-010-587	KF 69 0,01 UF 20% 1500V
C 529	8650-081-111	HV-KERKO 270PF 20% 2KV
C 530 ⚠	8660-098-219	SI-KERKO.B-SS 220PF 20%
C 532	8426-099-061	ELKO GR 4,7UF 350V
C 537 ⚠	8555-264-661	MKT5 0,033UF 10% 100V/MKS
C 541	8452-099-022	ELKO 17 220UF 40V
C 573 ⚠	8515-909-031	KF 31 0,36 UF 5% 250V
C 611 ⚠	8660-098-241	SI-KERKO B-SS 3300PF 20%
C 613	8660-098-241	SI-KERKO B-SS 3300PF 20%
C 621	8650-081-125	HV-KERKO 1000PF 20% 1KV
C 626	8443-306-055	ELKO 2 220UF 385V
C 634 ⚠	8515-911-633	KF 88 3300PF 10% 2000V
C 644	8520-699-563	KC 10 5600PF 5% 400V
C 645	8555-267-033	KT/MKT 5/3-4 2200PF 10%
C 646 ⚠	8525-033-487	KF 57 8200PF 5% 400V
C 657 ⚠	8452-297-090	ELKO 7 100UF 250V
C 662	8452-297-056	ELKO 8 600UF 63V
C 668 ⚠	8415-168-147	ELKO GR 1000UF 25V
C 671	8650-090-477	HV-KERKO 270PF 20% 2KV
C 672	8452-297-024	ELKO 6 470UF 40V
C 514	8515-909-008	KF 8 150PF +0/-10%
C 517 ⚠	8525-041-185	MKC 4-SV21 0,33 UF 5%
D 337	8309-215-127	DIODE 1 N 4007 -GA
D 338	8309-214-010	DIODE TD 129 -GA
D 504	8309-215-020	DIODE 1 N 4004 -GA
D 506	8309-201-103	DIODE BA 157 WW.
D 511	8309-720-052	Z DIODE 5,1 C 0,5W
D 515	8309-720-112	Z DIODE 12 C 0,5W
D 516	8309-214-114	DIODE TD 129 TID/ITT
D 520	8309-201-103	DIODE BA 157 WW.
D 522	8309-215-104	DIODE 1 N 4002 -GA
D 527	8309-720-056	Z DIODE 5,6 C 0,5W
D 529	8309-204-268	DIODE BYV 16 TFK/BYV 96E/
D 538	8309-200-021	DIODE BAV 21 ITT
D 539	8309-215-045	DIODE 1 N 4148 ITT/TID
D 546	8309-204-228	BY 228VAL/GI/TFK/RAS15/16
D 547	8309-210-144	DIODE BYW76 RAS15/12 /BYW
D 617	8309-720-116	Z DIODE 15 C 0,5W
D 621	8308-560-384	GLR.SKB 380 C1500 L5B SEM
D 631	8305-302-459	IC TDA 4601 SIE
D 633	8309-517-033	DIODE BYW 32/BYT 52D TFK
D 636	8309-204-268	DIODE BYV 16 TFK/BYV 96E/
D 638	8309-201-101	DIODE BA 159
D 639	8309-720-330	Z DIODE 30 B 0,5W

Pos. Nr. Pos. No.	Sachnummer Part number Références No. ordine	BEZEICHNUNG (D) DESCRIPTION (GB) DENOMINAZIONE (I) DESIGNATION (F) DENOMINACION (E)
D 656	8309-517-077	DIODE BYW76 RAS15/12/WW.
D 661	8309-712-822	DIODE MR 824-400 RAS15
D 671	8309-712-822	DIODE MR 824-400 RAS15
D 681	8309-712-822	DIODE MR 824-400 RAS15
D 2312	8309-214-114	DIODE TD 129 TID/ITT
D 331	8309-214-114	DIODE TD 129 TID/ITT
D 4009	8309-215-104	DIODE 1 N 4002 -GA
D 4022	8309-215-107	DIODE 1 N 4001 GI/ITT/TFK
D 516	8309-214-114	DIODE TD 129 TID/ITT
D 521	8309-201-103	DIODE BA 157 WW.
D 525	8309-201-103	DIODE BA 157 WW.
D 534	8309-215-020	DIODE 1 N 4004 -GA
D 616	8309-215-033	DIODE 1 N 4007 ITT/SES/
D 634	8309-215-033	DIODE 1 N 4007 ITT/SES/
D 635	8309-215-033	DIODE 1 N 4007 ITT/SES/
D 647	8309-517-033	DIODE BYW 32/BYT 52D TFK
IC 210	8305-201-953	IC CD4053BE RCA/BC NSC/MC
IC 330	8305-338-442	IC TDA 8442 VAL
IC 350	8305-332-820	IC TDA 2822 M ATE
IC 500	8305-338-140	IC TDA 8140 TFK
IC 631	8305-302-459	IC TDA 4601 SIE
IC 666	8305-102-012	IC 78 S 12 CV
IC 676	8305-205-703	IC MC 7805 CT
IC 240	8305-201-953	IC CD4053BE RCA/BC NSC/MC
IC 860	8305-686-600	ZC 86622
K 536 ⚠	8324-800-040	KASKADE BG 2087/642-1006
L 121	8104-982-014	DAEMPFUNGSPERLE
L 330	8140-525-918	DR AX 0411-GA 4,7MH
L 335	8140-525-969	DR AX 0411-GA 22UH
L 336	8140-526-451	DR AX 0411-GA 8,2UH
L 507	8140-525-950	DR AX 0411-GA 27UH
L 521	29203-110.97	LINEARITAETSREGLER
L 526	09240-110.21	DROSSEL 2,2 MH
L 541	29500-804.08	FERRITPERLE M.DR.KPL.
L 546	09245-405.08	O/W AUSKOPPELSPULE
L 573	09246-846.24	BRUECKENSPULE (110) 2 MH
L 631	29500-804.06	FERRITPERLE M.DRAHT KPL.
L 633	8140-526-535	DR AX 0411-GA 2,2UH
L 672	8140-526-320	DR AX 0411-GA 3,3UH
L 337	8140-526-451	DR AX 0411-GA 8,2UH
R 240 ⚠	8700-229-027	KSW AX 0207-GA NB
R 331	8790-050-046	ESTR.SK10-A 4,7 KOHM LIN
R 337	8705-265-105	MOW AX 0617-GA 22 KOHM
R 356 ⚠	8700-218-025	KSW AX 0207-GA NB 10 OHM
R 520	8781-430-058	DR-TWS 250 OHM 3W
R 521	8730-149-253	DRW 4 ST 150 OHM 10%
R 523 ⚠	8705-229-271	MOW AX 0411-GA 820 OHM
R 524 ⚠	8766-397-017	MSW LI 0207 4,7 OHM 5%
R 525 ⚠	8735-003-433	DW 0,75W 0,33 OHM 10%

ÄNDERUNGEN VORBEHALTEN - ALTERNATIONS RESERVED - CON RISERVA DI MODIFICHE - TOUS DROITS DE MODIFICATIONS RESERVES - CON RESERVA DE MODIFICACIONES

Pos. Nr. Pos. No.	Sachnummer Part number Références No. ordine	BEZEICHNUNG (D) DESCRIPTION (GB) DENOMINAZIONE (I) DESIGNATION (F) DENOMINACION (E)
R 527	8730-179-221	DRW 7 ST 6,8 OHM 10%
R 528 ⚠	8705-329-025	MOW LI 0411 10 OHM 5%
R 529	8700-041-123	KSW AX 0411-GA 120 KOHM
R 541	8705-369-027	MOW LI 0617 12 OHM 5%
R 544	8730-018-979	DRW 1 AX 0,12 OHM 5%
R 546 ⚠	8701-230-417	NKS 3 4,7 OHM 5% RES
R 616 ⚠	8730-179-093	DRW 7 ST 6,8 KOHM 5%
R 617	8730-179-297	DRW 7 ST 10 KOHM 10%
R 621	8730-199-016	DRW 11 ST 4,3 OHM 5% V3
R 626	8705-369-325	MOW LI 0617 150 KOHM 10%
R 631	8766-326-993	MSW LI 0207 0,47 OHM 5%
R 633	8766-327-035	MSW LI 0207 27 OHM 5%
R 635 ⚠	8718-250-155	Z 0414 2,7 MOHM VDE CECC
R 636	8730-179-041	DRW 7 ST 47 OHM 5%
R 646	8700-161-131	KSW LI 0617 270 KOHM
R 647	8796-101-143	ESTR.2,5 KOHM LIN FN "A"
R 648	8750-210-049	DW 7 ST 100 OHM 5%
R 649	8700-025-065	KSW AX 0207-GA 470 OHM
R 657	8705-329-321	MOW LI 0411 100 KOHM 10%
R 681 ⚠	8735-002-022	DRW 2 W 0,22 OHM 10%
SI 644 ⚠	8315-618-002	FS. 1,25 A/T
SI 661 ⚠	8315-622-025	LOET-SL.-GR 3,15 A/T
SI 671 ⚠	8315-621-027	LOET-SL.-GR 2,5 A/T
T 214	8303-201-548	TRANS.BC 548
T 216	8303-200-558	TRANS.BC 558
T 341	8303-201-548	TRANS.BC 548
T 502	8303-200-548	TRANS.BC 548
T 512	8303-200-558	TRANS.BC 558
T 531	8303-400-299	TRANS.BF 299 THO/S 298 ST
T 634	8302-260-903	TRANS.BU 903 TFK
T 521	8302-260-905	TRANS.BU 903/2 SD 1432
T 541	8302-260-506	TRANS.BU 508 A VAL/SANYO/
T 634	8302-260-208	TRANS.BU 208 A TOS/HIT
TR 526 ⚠	29201-019.10	ZEILENTRAFO KPL
TR 651	29500-609.62	SPERRWANDLERTRAFO
TY511	8309-505-102	THYR.TP 102/EO 102 YT

X SIEHE GESONDERTE E-LISTE

Sicherheitsvorschriften/Safety requirements / Prescrizioni de sicurezza / Prescriptions de sécurité / Prescripciones de seguridad

D:

Achtung: Bei Eingriffen ins Gerät sind die Sicherheitsvorschriften nach VDE 701 (reparaturbezogen) bzw. VDE 0860 / IEC 65 (gerätebezogen) zu beachten!

Bauteile nach IEC- bzw. VDE-Richtlinien ! Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!

MOS - Vorschriften beim Umgang mit MOS - Bauteilen beachten!

GB

Attention: Please observe the applicable safety requirements according to VDE 701 (concerning repairs) and VDE 0860 / IEC 65 (concerning type of product)!

Components to IEC or VDE guidelines! Only use components with the same specifications for replacement!

Observe **MOS** components handling instructions when servicing!

I

Attenzione: Osservarne le corrispondenti prescrizioni di sicurezza VDE 701 (concernente servizio) e VDE 0860 / IEC 65 (concernente il tipo di prodotto)!

Componenti secondo le norme VDE risp. te IEC! In caso di sostituzione impiegare solo componenti con le stesse caratteristiche.

Osservare le relative prescrizioni durante, lavori con componenti **MOS**!

F

Attention: Priere d'observer les prescriptions de sécurité VDE 701 (concernant les reparations) et VDE 0860 / IEC 65 (concernant le type de produit)!

Composants répondant aux normes VDE ou IEC. Les remplacer uniquement par des composants ayant les mêmes spécifications.

Lors de la manipulation des circuits **MOS**, respecter les pescriptions **MOS**!

E

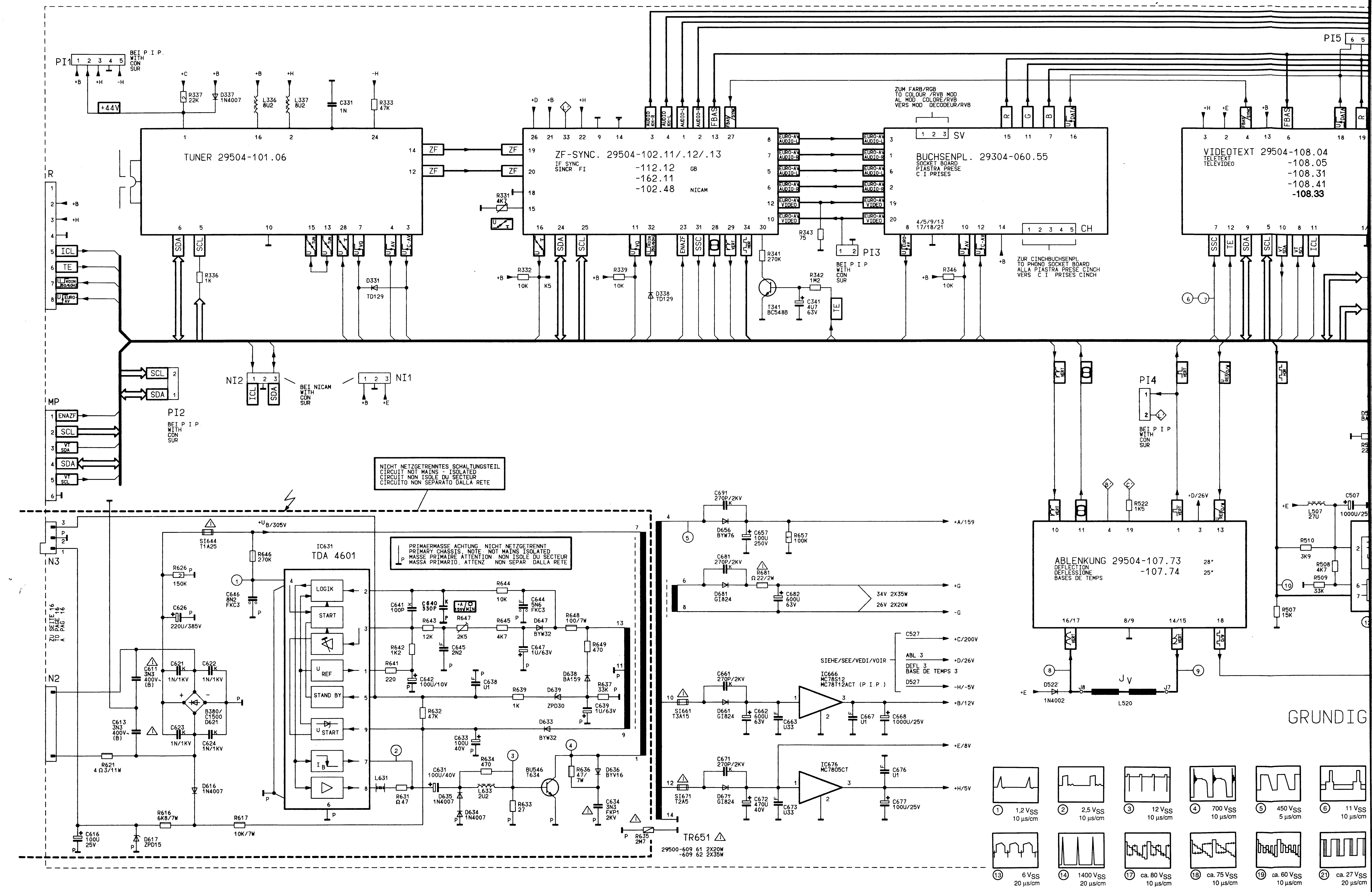
Atención: Recomendamos las normas de seguridad VDE u otras normas equivalentes, por ejemplo: VDE 701 para reparaciones, VDE 0860 / IEC 65 para aparatos!

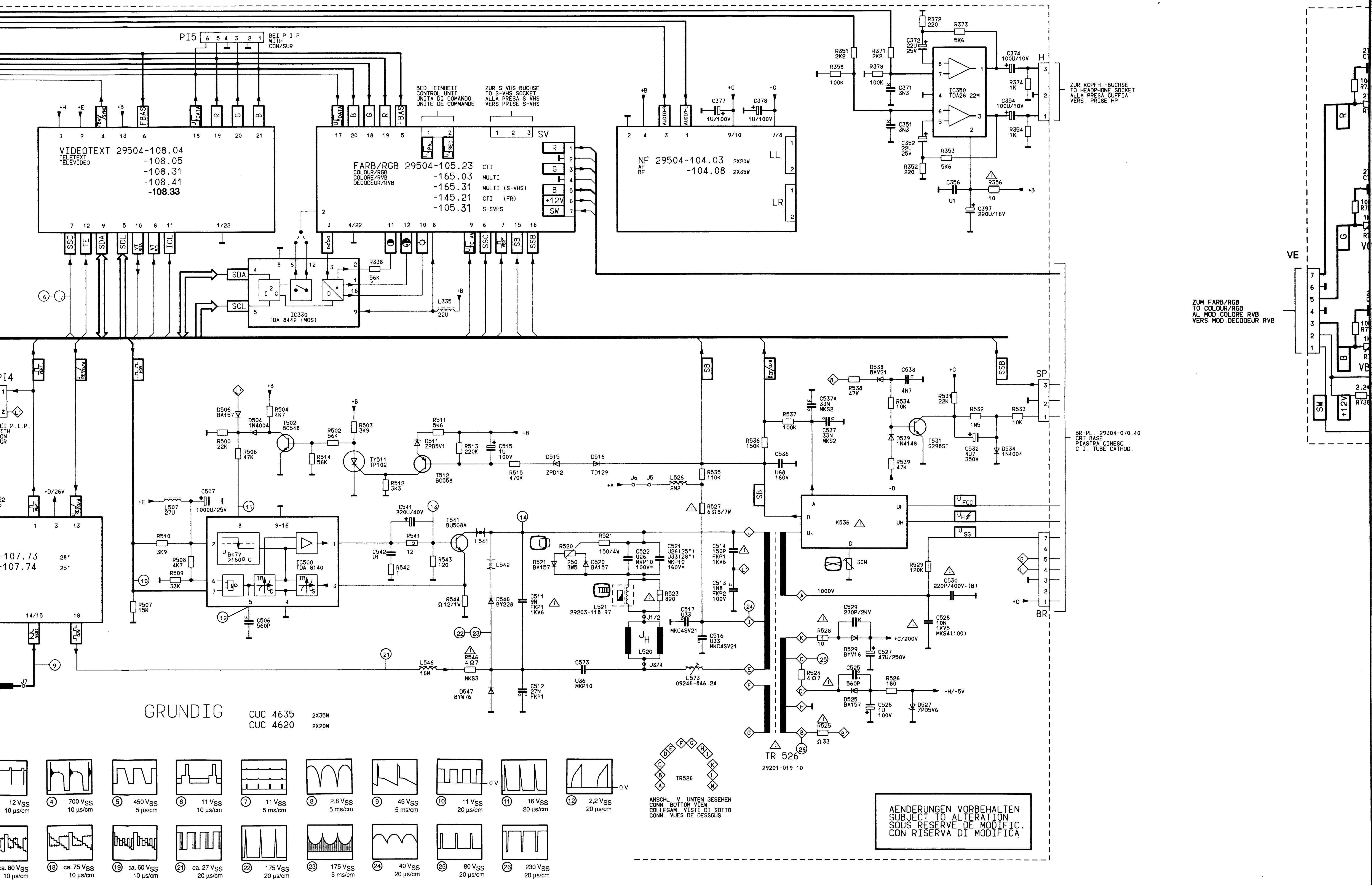
Componentes que cumplen las normas VDE/IEC. En caso de sustitución, emplear componentes con idénticas especificaciones!

Durante la reparacion observar las normas sobre componentes **MOS**!

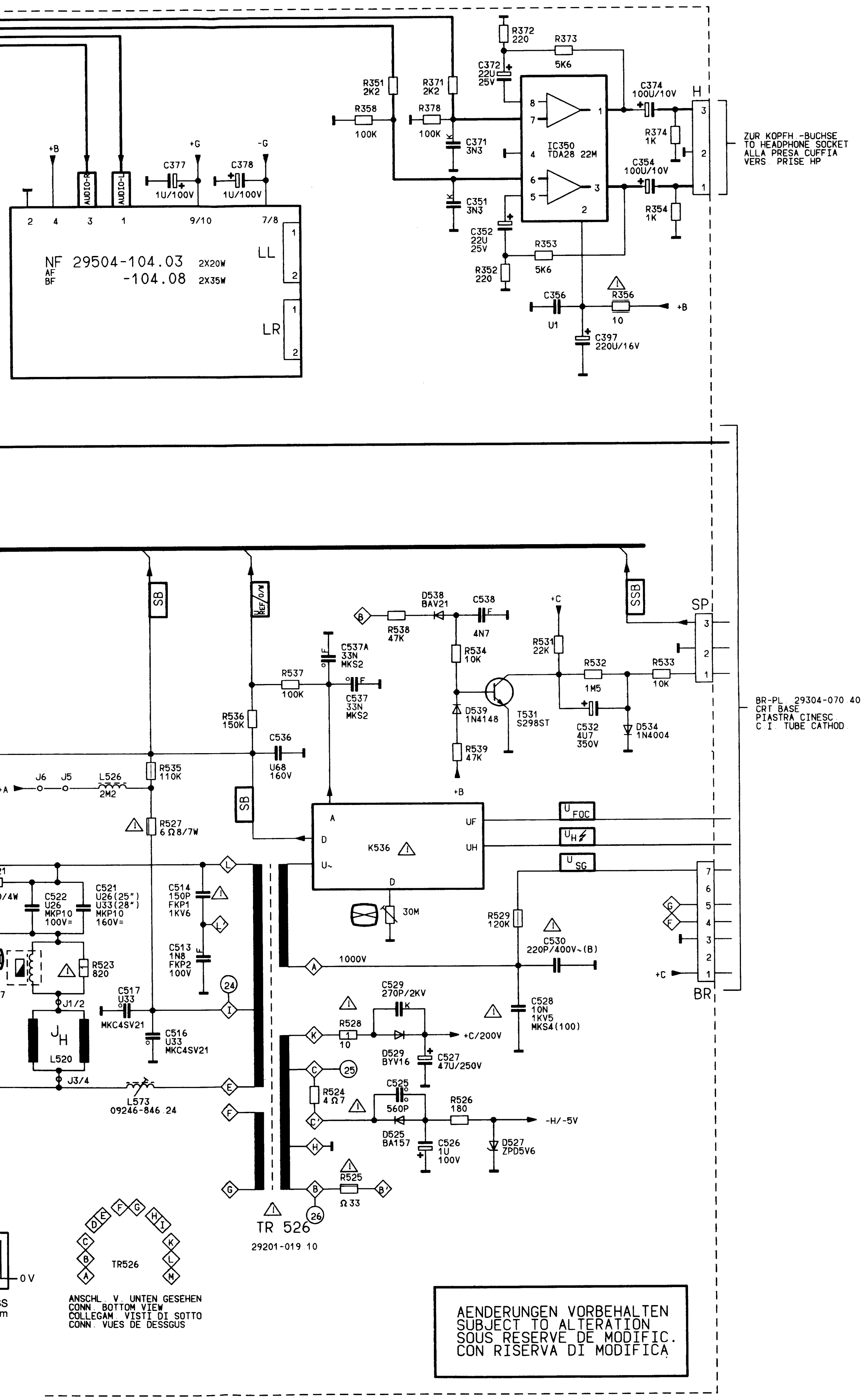
USA

Attention: This set can only be operated from AC mains of 120 V/60 Hz. Also observe the information given on the rear of the set.
CAUTION-for continued protection against risk of fire replace only with same type fuses!
CAUTION: to reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside,

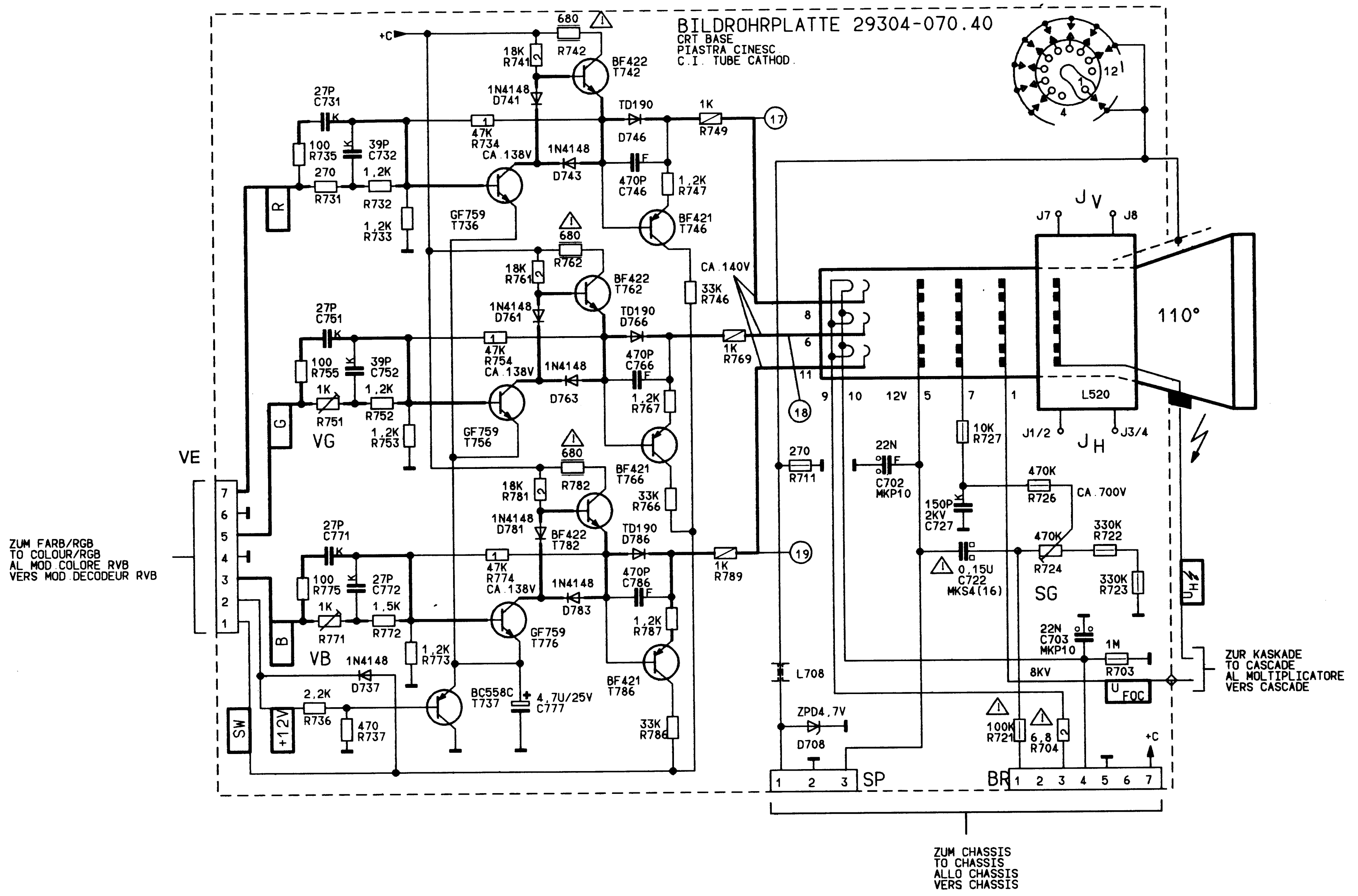

PI1
BEI P I P
WITH
CON
SUR
+44V
R337 22K
D337 1N4007
L336 8U2
L337 8U2
C331 1N
R333 47K
TUNER 29504-101.06
ZF
ZF-SYNC. 29504-102.11/.12/.13
IF SYNC.
SINCR. FI
-112.12 GB
-162.11
-102.48 NICAM
R331 4K7
SDA
SCL
R336 1K
D331 TD129
R332 10K
K5
R339 10K
D338 TD129
ENAZF
SSC
R343 75
R341 270K
T341 BC548B
R342 1M2
C341 4U7 63V
TE
PI3
EURO-AV AUDIO-L
EURO-AV AUDIO-R
EURO-AV VIDEO
ZUM FARB/RGB
TO COLOUR /RVB MOD
AL MOD. COLORE/RVB
VERS MOD. DECODEUR/RVB
SV
BUCHSENPL. 29304-060.55
SOCKET BOARD
PIASTRA PRESE
C I PRISES
CH
R346 10K
ZUR CINCHBUCHSENPL.
TO PHONO SOCKET BOARD
ALLA PIASTRA PRESE CINCH
VERS C I PRISES CINCH
VIDEOTEXT 29504-108.04
TELETEXT
TELEVIDEO
-108.05
-108.31
-108.41
-108.33
PI5
R
ICL
MP
NI2
BEI NICAM
WITH
CON
SUR
NI1
PI2
PI4
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE
N3
N2
ZU SEITE 16
TO PAGE 16
A PAG 16
SI644 T1A25
+U B/305V
R646 270K
R626 150K
C626 220U/385V
C646 8N2 FKC3
IC631
TDA 4601
LOGIK
START
REF
STAND BY
U START
PRIMAERMASSE ACHTUNG. NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE. NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION. NON ISOLE DU SECTEUR
MASSA PRIMARIO, ATTENZ. NON SEPAR. DALLA RETE
C611 3N3 400V~ (B)
C621 1N/1KV
C622 1N/1KV
B380/C1500 D621
C613 3N3 400V~ (B)
C623 1N/1KV
C624 1N/1KV
R621 4 Ω3/11W
D616 1N4007
R616 6K8/7W
R617 10K/7W
C616 100U 25V
D617 ZPD15
C641 100P
C640 330P
R643 12K
R647 2K5
R642 1K2
R641 220
C642 100U/10V
C645 2N2
R644 10K
C644 5N6 FKC3
R645 4K7
D647 BYW32
R648 100/7W
C647 1U/63V
R649 470
C638 U1
R639 1K
D639 ZPD30
D638 BA159
R637 33K
C639 1U/63V
R632 47K
D633 BYW32
C633 100U 40V
L631
R631 Ω47
C631 100U/40V
R634 470
D635 1N4007
L633 2U2
D634 1N4007
R633 27
BU546 T634
R636 47/7W
D636 BYV16
C634 3N3 FKP1 2KV
R635 2M7
TR651
29500-609 61 2X20W
-609 62 2X35W
C691 270P/2KV
D656 BYW76
C657 100U 250V
R657 100K
+A/159
C681 270P/2KV
R681 Ω22/2W
D681 GI824
C682 600U 63V
34V 2X35W
26V 2X20W
+G
-G
C527
+C/200V
ABL 3
+D/26V
DEFL 3
BASE DE TEMPS 3
D527
-H/-5V
SIEHE/SEE/VEDI/VOIR
IC666
MC78S12
MC78T12ACT (P I P)
SI661 T3A15
C661 270P/2KV
D661 GI824
C662 600U 63V
C663 U33
C667 U1
C668 1000U/25V
+B/12V
+E/8V
SI671 T2A5
C671 270P/2KV
D671 GI824
C672 470U 40V
C673 U33
IC676
MC7805CT
C676 U1
C677 1000U/25V
+H/5V
R522 1K5
ABLENKUNG 29504-107.73 28"
DEFLECTION
DEFLESSIONE
BASES DE TEMPS
-107.74 25"
D522 1N4002
J8
J7
L520
Jv
L507 27U
C507 1000U/25
R510 3K9
R508 4K7
R509 33K
R507 15K
GRUNDIG
① 1,2 VSS 10 µs/cm
② 2,5 VSS 10 µs/cm
③ 12 VSS 10 µs/cm
④ 700 VSS 10 µs/cm
⑤ 450 VSS 5 µs/cm
⑥ 11 VSS 10 µs/cm
⑬ 6 VSS 20 µs/cm
⑭ 1400 VSS 20 µs/cm
⑰ ca. 80 VSS 10 µs/cm
⑱ ca. 75 VSS 10 µs/cm
⑲ ca. 60 VSS 10 µs/cm
㉑ ca. 27 VSS 20 µs/cm


PI5
BEI P I P
WITH
CON/SUR
VIDEOTEXT 29504-108.04
TELETEXT
TELEVIDEO
-108.05
-108.31
-108.41
-108.33
FARB/RGB 29504-105.23 CTI
COLOUR/RGB
COLORE/RVB
DECODEUR/RVB
-165.03 MULTI
-165.31 MULTI (S-VHS)
-145.21 CTI (FR)
-105.31 S-SVHS
BED.-EINHEIT
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
ZUR S-VHS-BUCHSE
TO S-VHS SOCKET
ALLA PRESA S VHS
VERS PRISE S-VHS
SV
NF 29504-104.03 2X20W
AF
BF
-104.08 2X35W
LL
LR
IC350
TDA28 22M
ZUR KOPFH -BUCHSE
TO HEADPHONE SOCKET
ALLA PRESA CUFFIA
VERS PRISE HP
IC330
TDA 8442 (MOS)
SDA
SCL
SSC
TE
VE
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD COLORE RVB
VERS MOD DECODEUR RVB
IC500
TDA 8140
T502 BC548
TY511 TP102
T512 BC558
T541 BU508A
T531 S298ST
K536
SP
BR
BR-PL 29304-070 40
CRT BASE
PIASTRA CINESC
C I TUBE CATHOD
L521
29203-118 97
L520
L573
09246-846 24
TR 526
29201-019 10
TR526
ANSCHL V UNTEN GESEHEN
CONN BOTTOM VIEW
COLLEGAM VISTI DI SOTTO
CONN VUES DE DESSGUS
GRUNDIG
CUC 4635 2X35W
CUC 4620 2X20W
-107.73 28"
-107.74 25"
12 VSS 10 µs/cm
④ 700 VSS 10 µs/cm
⑤ 450 VSS 5 µs/cm
⑥ 11 VSS 10 µs/cm
⑦ 11 VSS 5 ms/cm
⑧ 2,8 VSS 5 ms/cm
⑨ 45 VSS 5 ms/cm
⑩ 11 VSS 20 µs/cm
⑪ 16 VSS 20 µs/cm
⑫ 2,2 VSS 20 µs/cm
ca. 80 VSS 10 µs/cm
⑱ ca. 75 VSS 10 µs/cm
⑲ ca. 60 VSS 10 µs/cm
㉑ ca. 27 VSS 20 µs/cm
㉒ 175 VSS 20 µs/cm
㉓ 175 VSS 5 ms/cm
㉔ 40 VSS 20 µs/cm
㉕ 80 VSS 20 µs/cm
㉖ 230 VSS 20 µs/cm

AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
SOUS RESERVE DE MODIFIC.
CON RISERVA DI MODIFICA


NF 29504-104.03 2X20W
AF
BF
-104.08 2X35W
LL
LR
IC350 TDA28 22M
AUDIO-R
AUDIO-L
ZUR KOPFH -BUCHSE
TO HEADPHONE SOCKET
ALLA PRESA CUFFIA
VERS PRISE HP
H
SP
BR
K536
BR-PL 29304-070 40
CRT BASE
PIASTRA CINESC
C.I. TUBE CATHOD
L573
09246-846 24
L520
TR 526
29201-019 10
TR526
ANSCHL V UNTEN GESEHEN
CONN BOTTOM VIEW
COLLEGAM VISTI DI SOTTO
CONN VUES DE DESSGUS

AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
SOUS RESERVE DE MODIFIC.
CON RISERVA DI MODIFICA


BILDROHRPLATTE 29304-070.40
CRT BASE
PIASTRA CINESC
C.I. TUBE CATHOD
VE
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD COLORE RVB
VERS MOD DECODEUR RVB
VG
VB
SG
L520
110°
ZUR KASKADE
TO CASCADE
AL MOLTIPLICATORE
VERS CASCADE
SP
BR
ZUM CHASSIS
TO CHASSIS
ALLO CHASSIS
VERS CHASSIS

(D)

ABGLEICH DER BRÜCKENSPULE L 573

Bildbreite auf Minimum, den Tastkopf eines Zweistrahloszilloscopes an den Kollektor des Tranistors T541 (BU 508 A) einhängen.
Den anderen Tastkopf zwischen den Dioden D 546 und D 547 anschließen.
Mit der Spule L 573 beide Oszillogramme auf gleiche Impulsbreite abgleichen.

(GB)

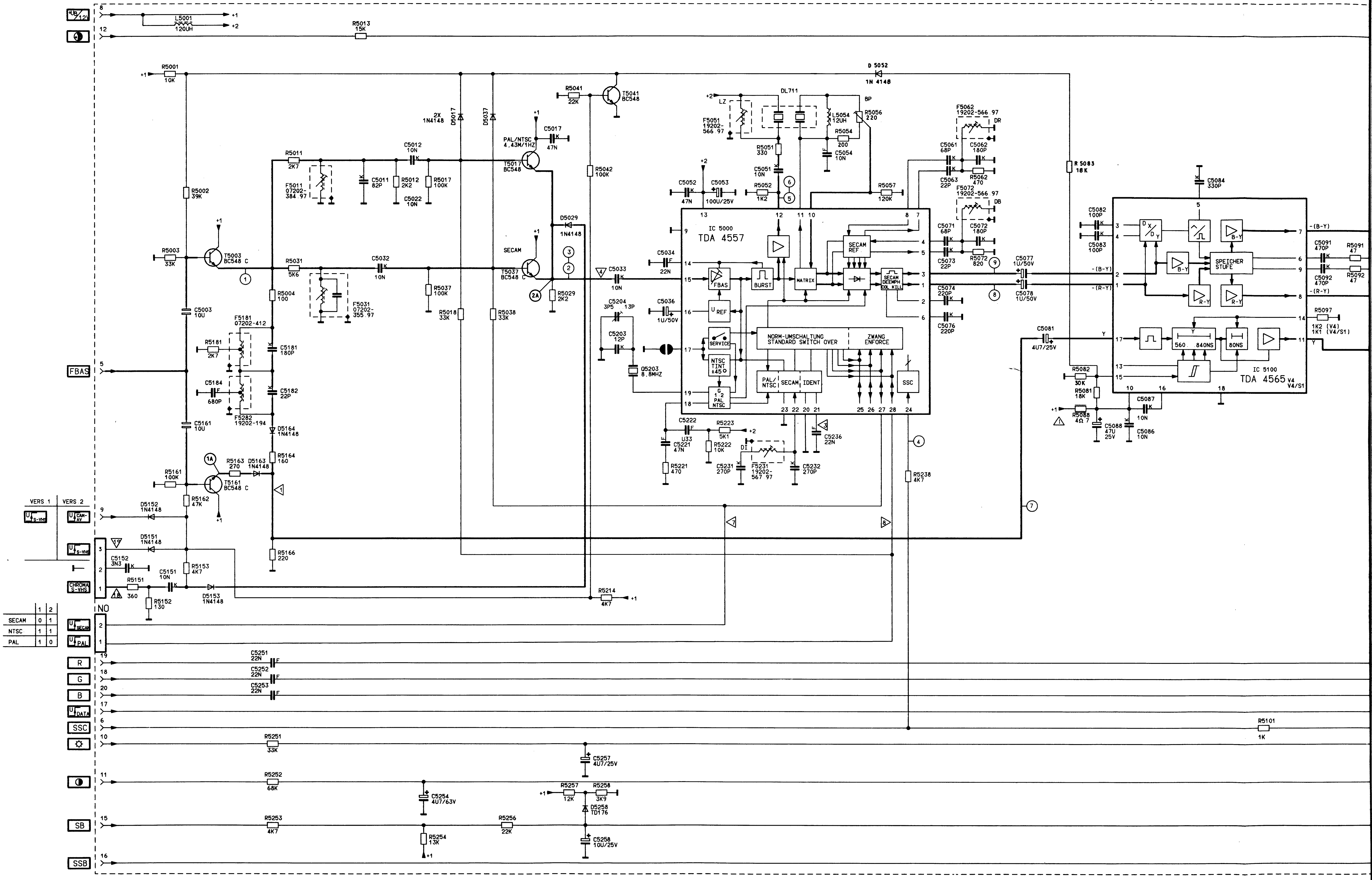
ADJUSTMENT OF THE BRIDGE COIL L 573

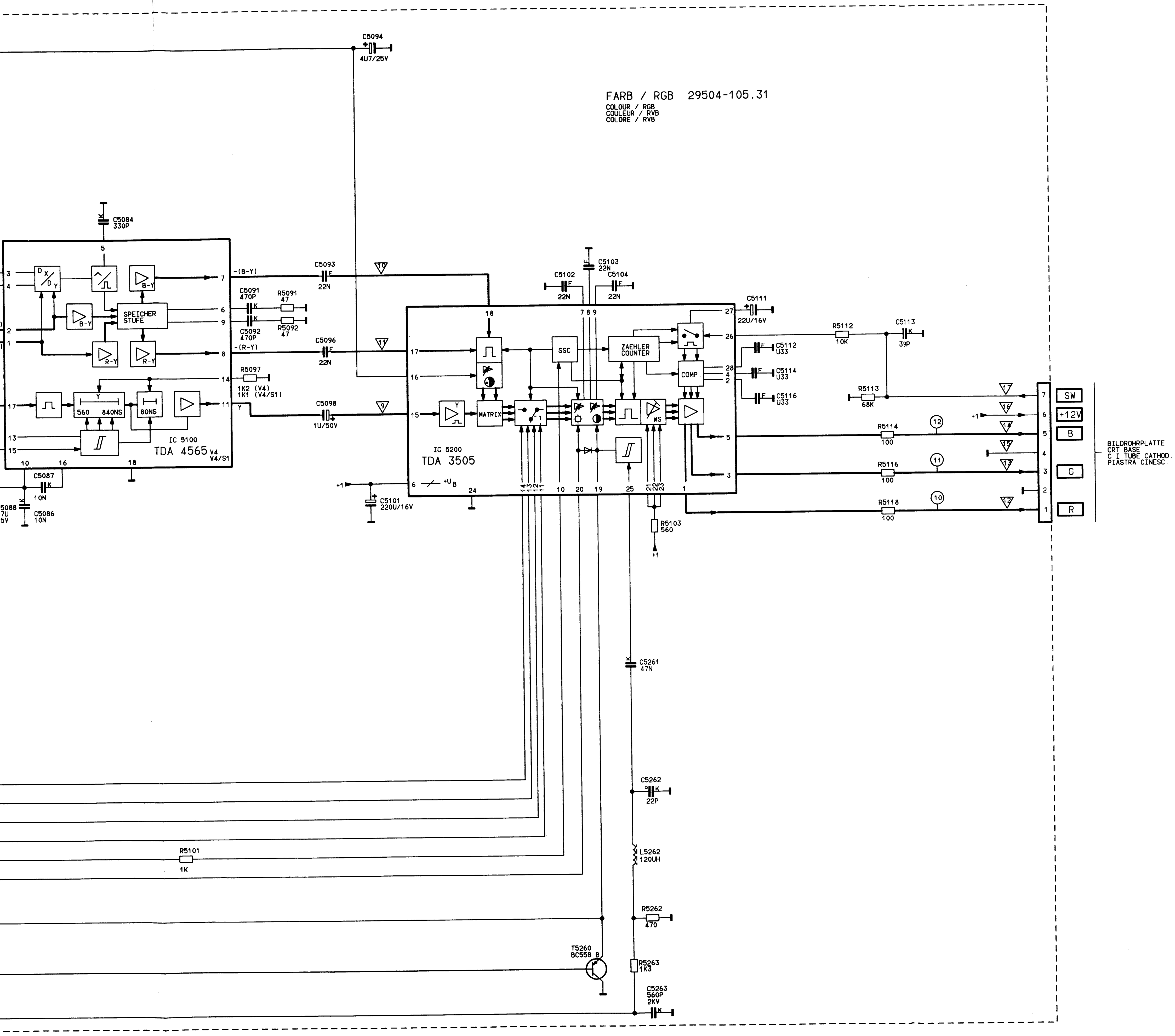
Picture width to minimum, then connect one test probe of a twin beam oscilloscope to the collector of transistor T 504 (BU 508 A).
Connect the other test probe to the junction of D 546, D 547.
Adjust the coil L 573 so that both oscillograms have the same pulse width.

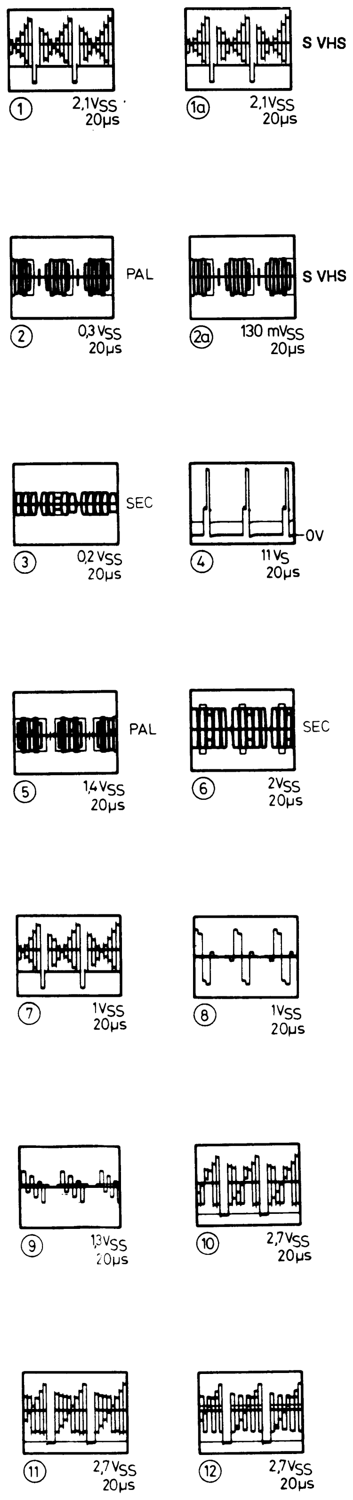
(I)

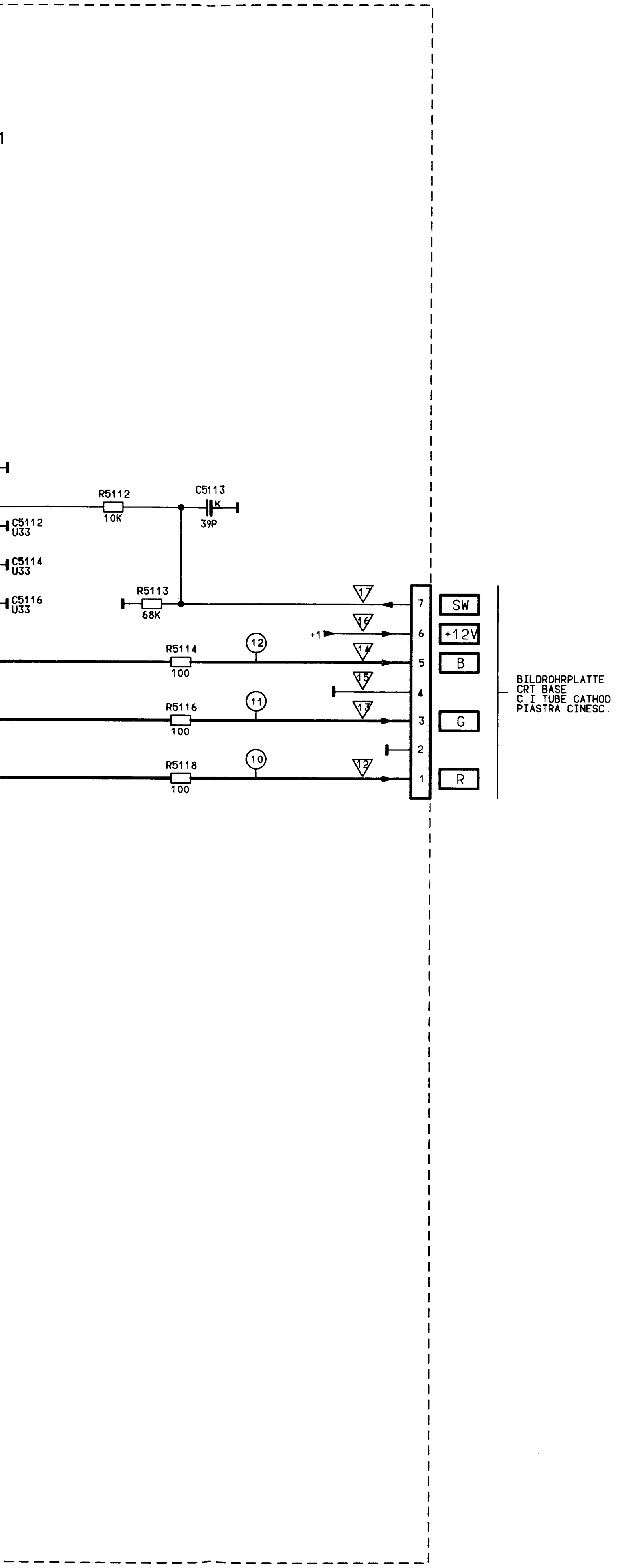
TARATURA DELLA BOBINA A PONTE L 573

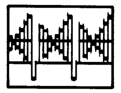
Portare la largezza dell'immagine sul minimo è impiegare un oscilloscopio a doppia traccia collegando una sonda al collettore del transistor T 541 (BU 508 A) e a'altra tra i diodi D 546 e D 547.
Con la bobina L 573 tarare i due oscillogrammi per la stessa larghezza dell'impulso.

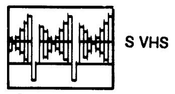

+UB 12V
FBAS
VERS 1
VERS 2
U S-VHS
U CAM-AV
U S-VHS
CHROMA S-VHS
NO
	1	2
SECAM	0	1
NTSC	1	1
PAL	1	0
U SECAM
U PAL
R
G
B
U DATA
SSC
SB
SSB
L5001 120UH
R5013 15K
R5001 10K
R5002 39K
R5003 33K
T5003 BC548 C
C5003 10U
C5161 10U
R5161 100K
T5161 BC548 C
R5162 47K
R5163 270
D5163 1N4148
D5152 1N4148
D5151 1N4148
C5152 3N3
R5151 360
R5152 130
C5151 10N
D5153 1N4148
R5153 4K7
R5011 2K7
F5011 07202-384 97
C5011 82P
R5012 2K2
C5012 10N
C5022 10N
R5017 100K
R5031 5K6
F5031 07202-355 97
C5032 10N
R5037 100K
R5004 100
F5181 07202-412
R5181 2K7
C5181 180P
C5184 680P
F5282 19202-194
C5182 22P
D5164 1N4148
R5164 160
R5166 220
2X 1N4148
D5017
D5037
R5018 33K
R5038 33K
PAL/NTSC 4,43M/1HZ
T5017 BC548
C5017 47N
SECAM
T5037 BC548 C
D5029 1N4148
R5029 2K2
R5041 22K
T5041 BC548
R5042 100K
R5214 4K7
C5033 10N
C5034 22N
C5036 1U/50V
C5204 3P5 13P
C5203 12P
Q5203 8,8MHZ
LZ
F5051 19202-566 97
DL711
L5054 12UH
BP
R5056 220
R5054 200
C5054 10N
R5051 330
C5051 10N
C5052 47N
C5053 100U/25V
R5052 1K2
R5057 120K
IC 5000
TDA 4557
FBAS
BURST
MATRIX
SECAM REF
SECAM DEEMPH COL.KILL
U REF
SERVICE
NTSC TINT ±45°
G 1 2 PAL NTSC
NORM-UMSCHALTUNG STANDARD SWITCH OVER
ZWANG ENFORCE
PAL/NTSC
SECAM
IDENT
SSC
C5222 U33
C5221 47N
R5221 470
R5223 5K1
R5222 10K
DI
F5231 19202-567 97
C5231 270P
C5232 270P
C5236 22N
R5238 4K7
D 5052 1N 4148
F5062 19202-566 97
DR
C5061 68P
C5062 180P
C5063 22P
R5062 470
F5072 19202-566 97
DB
C5071 68P
C5072 180P
C5073 22P
R5072 820
C5074 220P
C5076 220P
C5077 1U/50V
C5078 1U/50V
C5081 4U7/25V
R 5083 18K
C5082 100P
C5083 100P
C5084 330P
IC 5100
TDA 4565 V4 V4/S1
SPEICHER STUFE
B-Y
R-Y
560 840NS
80NS
-(B-Y)
-(R-Y)
Y
C5091 470P
C5092 470P
R5091 47
R5092 47
R5097 1K2 (V4) 1K1 (V4/S1)
R5082 30K
R5081 18K
R5088 4Ω 7
C5088 47U 25V
C5087 10N
C5086 10N
R5101 1K
C5251 22N
C5252 22N
C5253 22N
R5251 33K
C5257 4U7/25V
R5252 68K
C5254 4U7/63V
R5257 12K
R5258 3K9
D5258 TD176
R5253 4K7
R5254 13K
R5256 22K
C5258 10U/25V


FARB / RGB 29504-105.31
COLOUR / RGB
COULEUR / RVB
COLORE / RVB
C5094
4U7/25V
C5084
330P
IC 5100
TDA 4565 V4 V4/S1
SPEICHER STUFE
560 ... 840NS
80NS
-(B-Y)
-(R-Y)
Y
C5093
22N
C5091
470P
R5091
47
C5092
470P
R5092
47
C5096
22N
R5097
1K2 (V4)
1K1 (V4/S1)
C5098
1U/50V
C5087
10N
C5088
C5086
10N
IC 5200
TDA 3505
MATRIX
SSC
ZAEHLER COUNTER
COMP
WS
C5102
22N
C5103
22N
C5104
22N
C5111
22U/16V
C5112
U33
C5114
U33
C5116
U33
R5112
10K
C5113
39P
R5113
68K
R5114
100
R5116
100
R5118
100
C5101
220U/16V
R5103
560
+1
SW
+12V
B
G
R
BILDROHRPLATTE
CRT BASE
C I TUBE CATHOD
PIASTRA CINESC
C5261
47N
C5262
22P
L5262
120UH
R5262
470
R5101
1K
T5260
BC558
R5263
1K3
C5263
560P
2KV

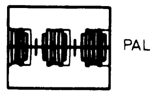

① 2,1VSS 20µs
①a S VHS 2,1VSS 20µs
② PAL 0,3 VSS 20µs
②a S VHS 130 mVSS 20µs
③ SEC 0,2 VSS 20µs
④ 0V 11 VS 20µs
⑤ PAL 1,4 VSS 20µs
⑥ SEC 2VSS 20µs
⑦ 1VSS 20µs
⑧ 1VSS 20µs
⑨ 1,3VSS 20µs
⑩ 2,7VSS 20µs
⑪ 2,7VSS 20µs
⑫ 2,7VSS 20µs



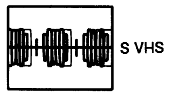

① 2,1 VSS 20µs



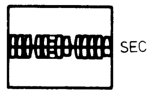
①a 2,1 VSS 20µs



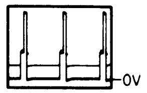
② 0,3 VSS 20µs



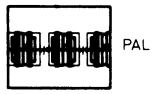
②a 130 mVSS 20µs



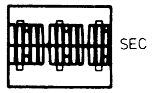
③ 0,2 VSS 20µs



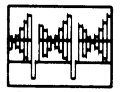
④ 11 VS 20µs

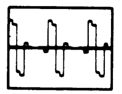


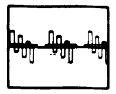
⑤ 1,4 VSS 20µs

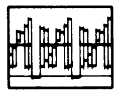


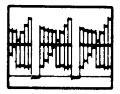
⑥ 2 VSS 20µs

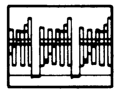

⑦ 1 VSS 20µs


⑧ 1 VSS 20µs


⑨ 1,3 VSS 20µs


⑩ 2,7 VSS 20µs


⑪ 2,7 VSS 20µs


⑫ 2,7 VSS 20µs

D

1. **Weißabgleich**
   - FuBK-Testbild einspeisen.
   - ◐ min., ☼ nom., ◑ max. einstellen.
   - Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. **Sperrpunktabgleich**
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen.
   - ◐ min., ☼ nom., ◑ min. einstellen.
   - Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140- 150 V.

3. **Einstellungen im Farbkanal**
   - PAL-Testbild einspeisen.
   - ◐ nom., ☼ nom., ◑ max. einstellen.
   - IC-Pin 28 vom TDA 4557 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4557 mit Masse verbinden.
   - Mit Trimmer C 5204 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
   - SECAM-Testbild einspeisen.
   - Tastkopf an Pin 1 vom TDA 4557 anschließen, mit Spule DR Nulllinie des (R-Y)-Signals auf Zeilenniveau bringen.
   - Tastkopf an Pin 3 vom TDA 4557 anschließen, mit Spule DB Nulllinie des (B-Y)-Signals auf Zeilentastniveau bringen.
   - Spule F 5031 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

GB

1. **White level adjustment**
   - Display colour bar test pattern.
   - Set ◐ to min., ☼ to nom., ◑ to max.
   - Adjust presets VG and VB (CTR socket board) so that the picture does not show any colouration.

2. **Adjustment of cut-off point**
   Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
   To check cut-off point (oscilloscope required), proceed as follows:
   - Display colour bar test pattern.
   - Set ◐ to min., ☼ to nom., ◑ to min
   - Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).The black levels of the three cathode signals should be 140-150V.

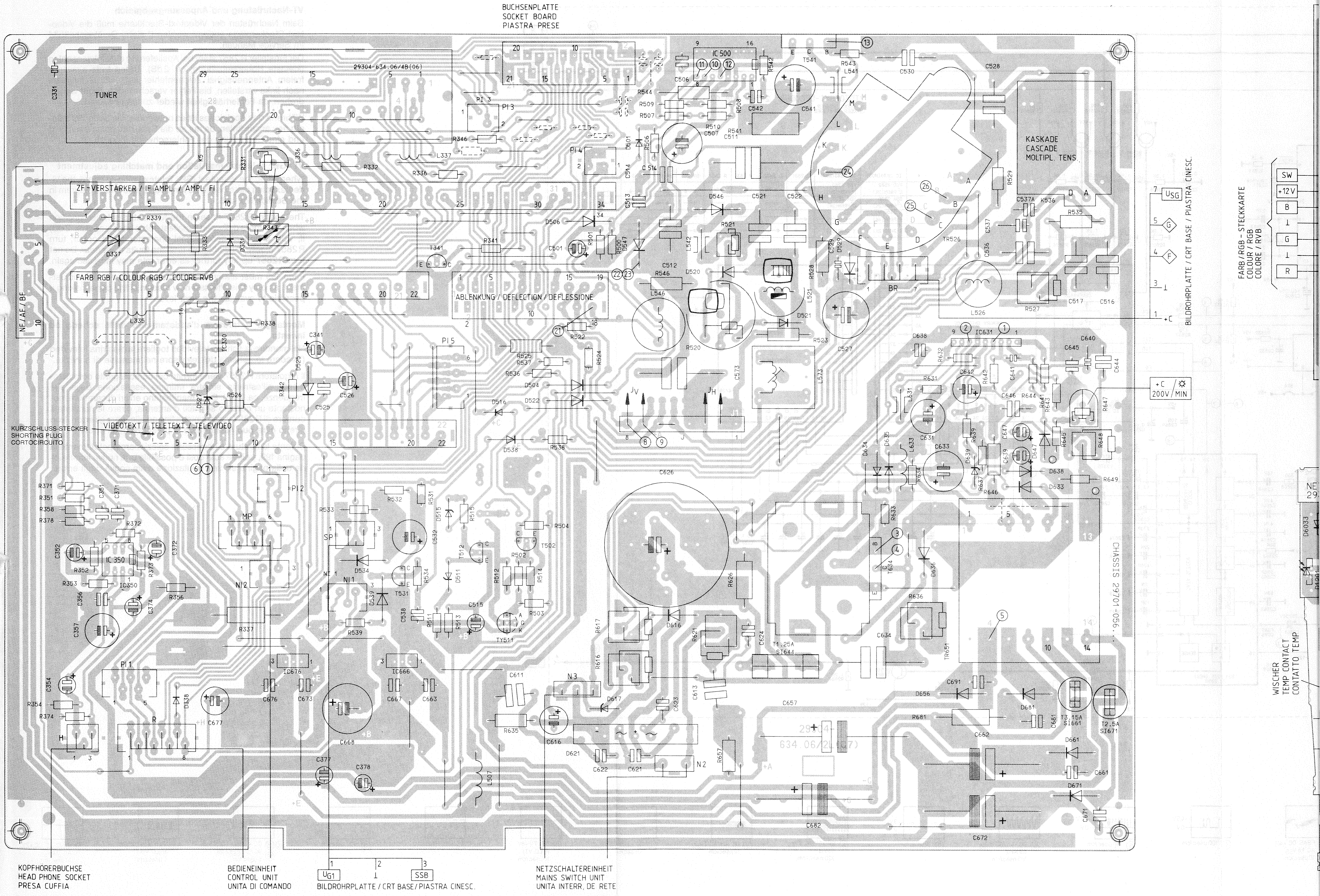
3. **Adjustments in chroma channel**
   - Display PAL test pattern.
   - Set ◐ to nom., ☼ to nom., ◑ to max.
   - Connect pin 28 of IC TDA 4557 to +12V supply.
   - Connect pin 17 to IC TDA 4557 to chassis.
   - Adjust trimmer C 5204 for stationary pattern in colour bars.
   - Remove wire links.
   - Connect test probe to test point MP 12. Bring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
   - Display SECAM test pattern.
   - Connect test probe to pin 1 of IC TDA 4557.
   - Use coil DR to align zero level of the (R-Y) signal with the line black level.
   - Connect test probe to pin 3 of IC TDA 4557.
   - Use coil DB to align zero level of the (B-Y) signal with the line black level.
   - Adjust coil F 5031 so that the (B-Y) signal is free of overshooting.

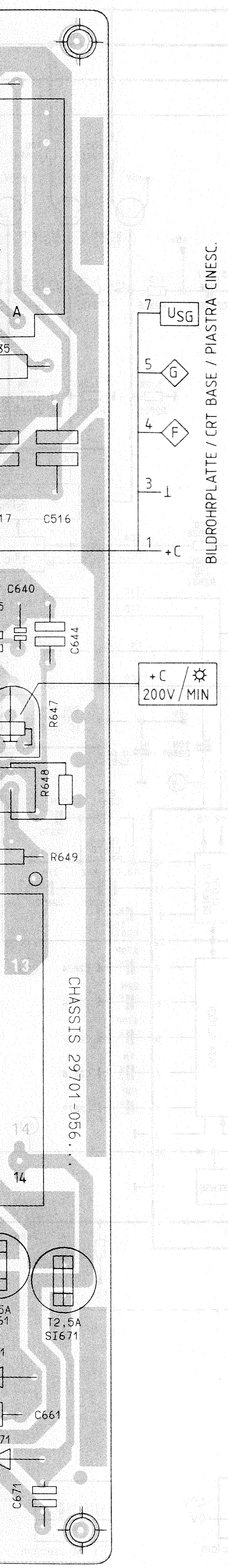
I

1. **Taratura del bianco**
   - Applicare un monoscopio FuBK.
   - Regolare ◐ al minimo, ☼ sul valore nominale e ◑ al massimo.
   - Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

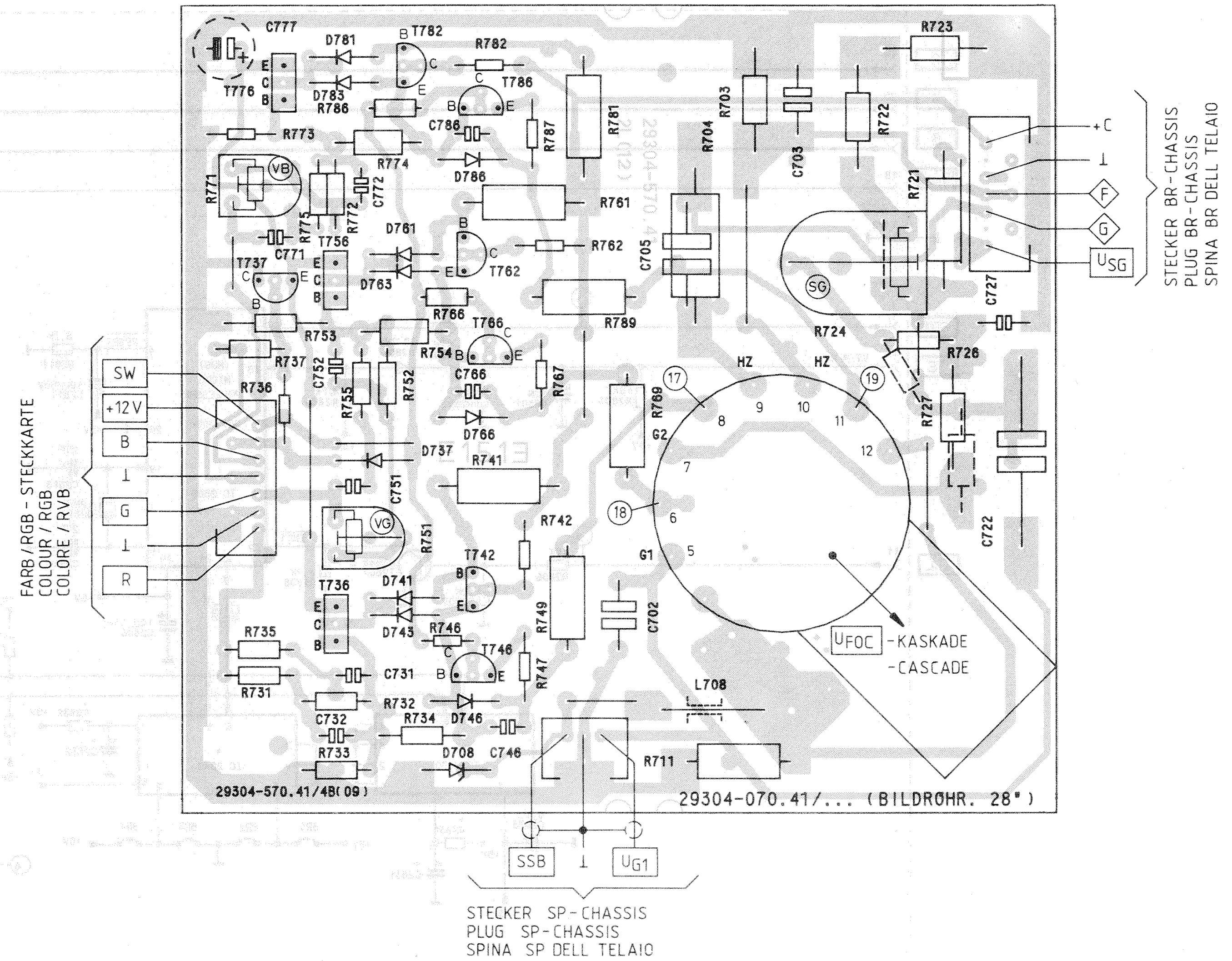
2. **Taratura del punto di blocco**
   Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
   Controllo del punto di blocco (é necessario un oscilloscopio):
   - Applicare un monoscopio FuBK.
   - Regolare ◐ al minimo, ☼ sul valore nominale e ◑ al minimo.
   - Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
     Valore nero dei tre segnali catodici ca. 140-150V.

3. **Regolazione del canale colore**
   - Applicare un monoscopio PAL.
   - Regolare ◐ al nominale, ☼ sul valore nominale e ◑ al massimo.
   - Sull'integrato TDA 4557 collegare pin 28 a +12V.
   - Sull'integrato TDA 4557 collegare pin 17 a massa.
   - Con C 5204 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
   - Applicare un monoscopio SECAM.
   - Collegare la sonda al pin 1 dell'integrato TDA 4557, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
   - Collegare la sonda al pin 3 dell'integrato TDA 4557, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
   - La bobina F 5031 applicarla così in modo che il segnale (B-Y) sia chiaro.

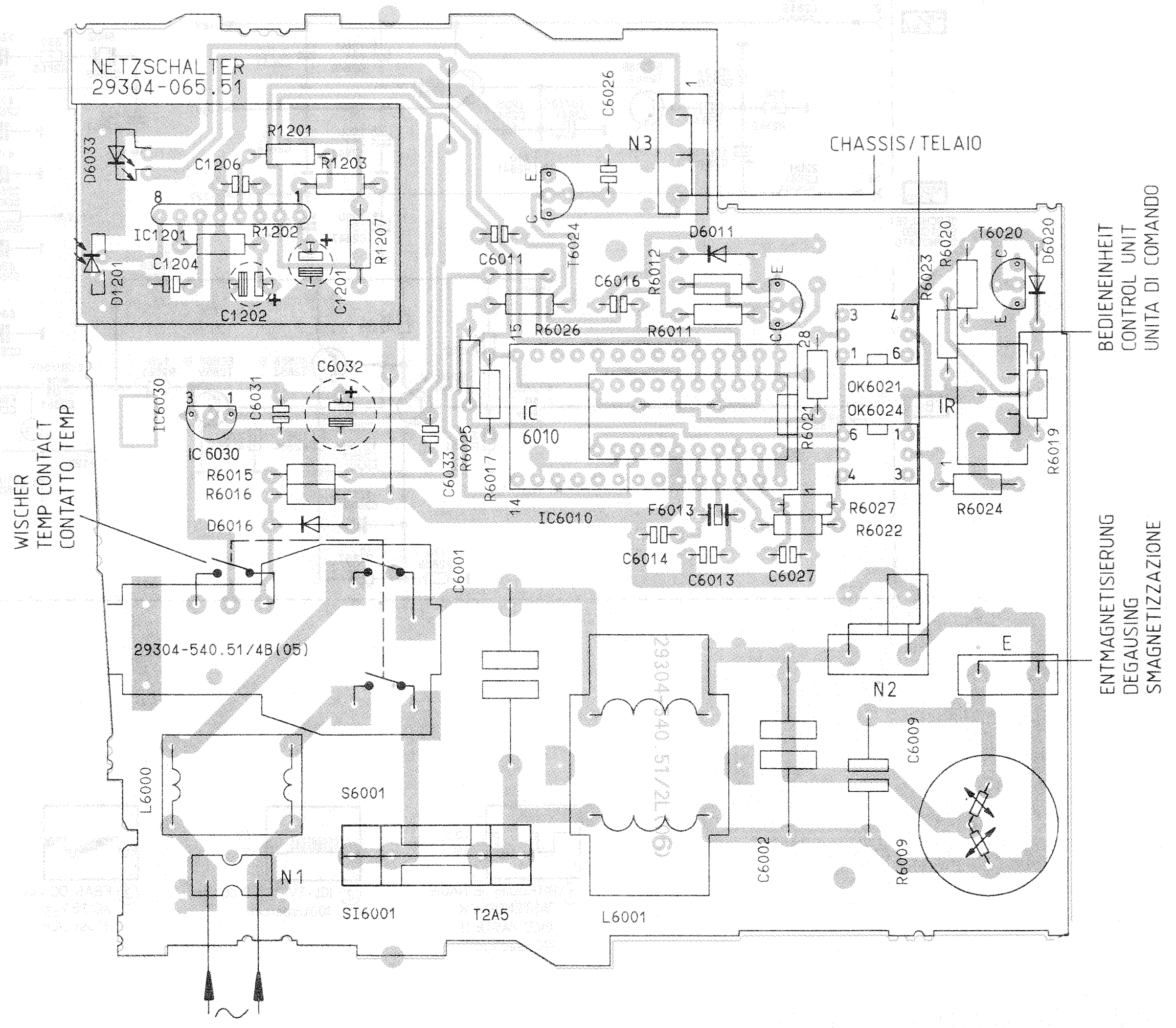

BUCHSENPLATTE
SOCKET BOARD
PIASTRA PRESE
TUNER
29304-634.06/48(06)
ZF-VERSTÄRKER / IF AMPL. / AMPL. FI
FARB RGB / COLOUR RGB / COLORE RVB
ABLENKUNG / DEFLECTION / DEFLESSIONE
VIDEOTEXT / TELETEXT / TELEVIDEO
KURZSCHLUSS-STECKER
SHORTING PLUG
CORTOCIRCUITO
NF/AF/BF
IC 500
IC330
IC 350
IC631
IC676
IC666
KASKADE
CASCADE
MOLTIPL. TENS.
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.
USG
+C
+C / ☼
200V / MIN
FARB/RGB - STECKKARTE
COLOUR / RGB
COLORE / RVB
SW
+12V
B
G
R
CHASSIS 29701-056...
634.06/2
T1,25A
SI644
T3,15A
SI661
T2,5A
SI671
WISCHER
TEMP CONTACT
CONTATTO TEMP
KOPFHÖRERBUCHSE
HEAD PHONE SOCKET
PRESA CUFFIA
BEDIENEINHEIT
CONTROL UNIT
UNITÀ DI COMANDO
UG1
SSB
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.
NETZSCHALTEREINHEIT
MAINS SWITCH UNIT
UNITA INTERR. DE RETE



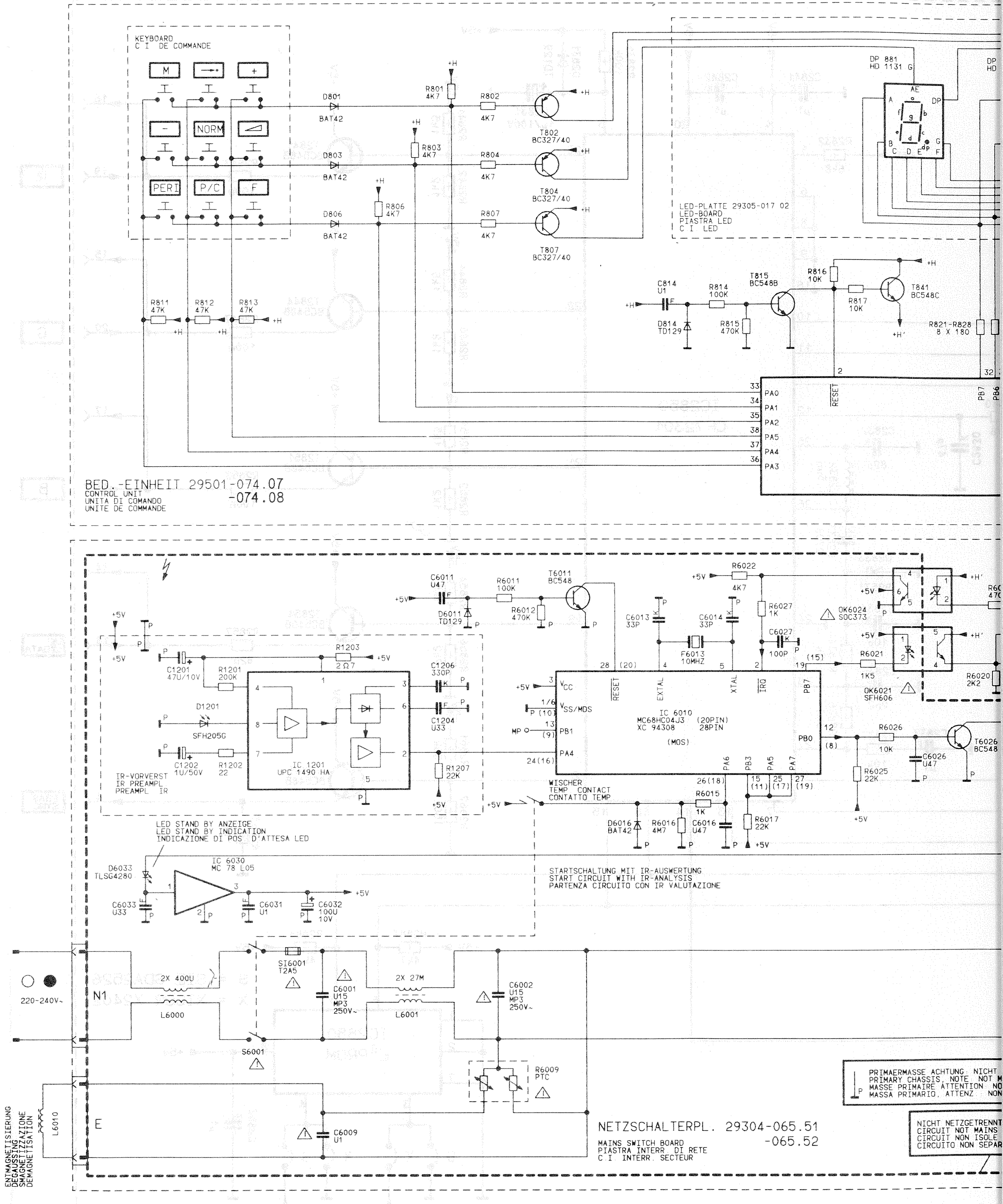
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.
USG
+C
+C / 200V / MIN
R647
R648
R649
C516
C640
C644
C661
T2,5A
SI671
CHASSIS 29701-056...



FARB/RGB-STECKKARTE
COLOUR/RGB
COLORE/RVB
SW
+12V
B
G
R
STECKER BR-CHASSIS
PLUG BR-CHASSIS
SPINA BR DELL TELAIO
+C
USG
UFOC -KASKADE
-CASCADE
STECKER SP-CHASSIS
PLUG SP-CHASSIS
SPINA SP DELL TELAIO
SSB
UG1
29304-570.41/4B(09)
29304-070.41/... (BILDROHR. 28")
HZ
G1
G2
L708
R711

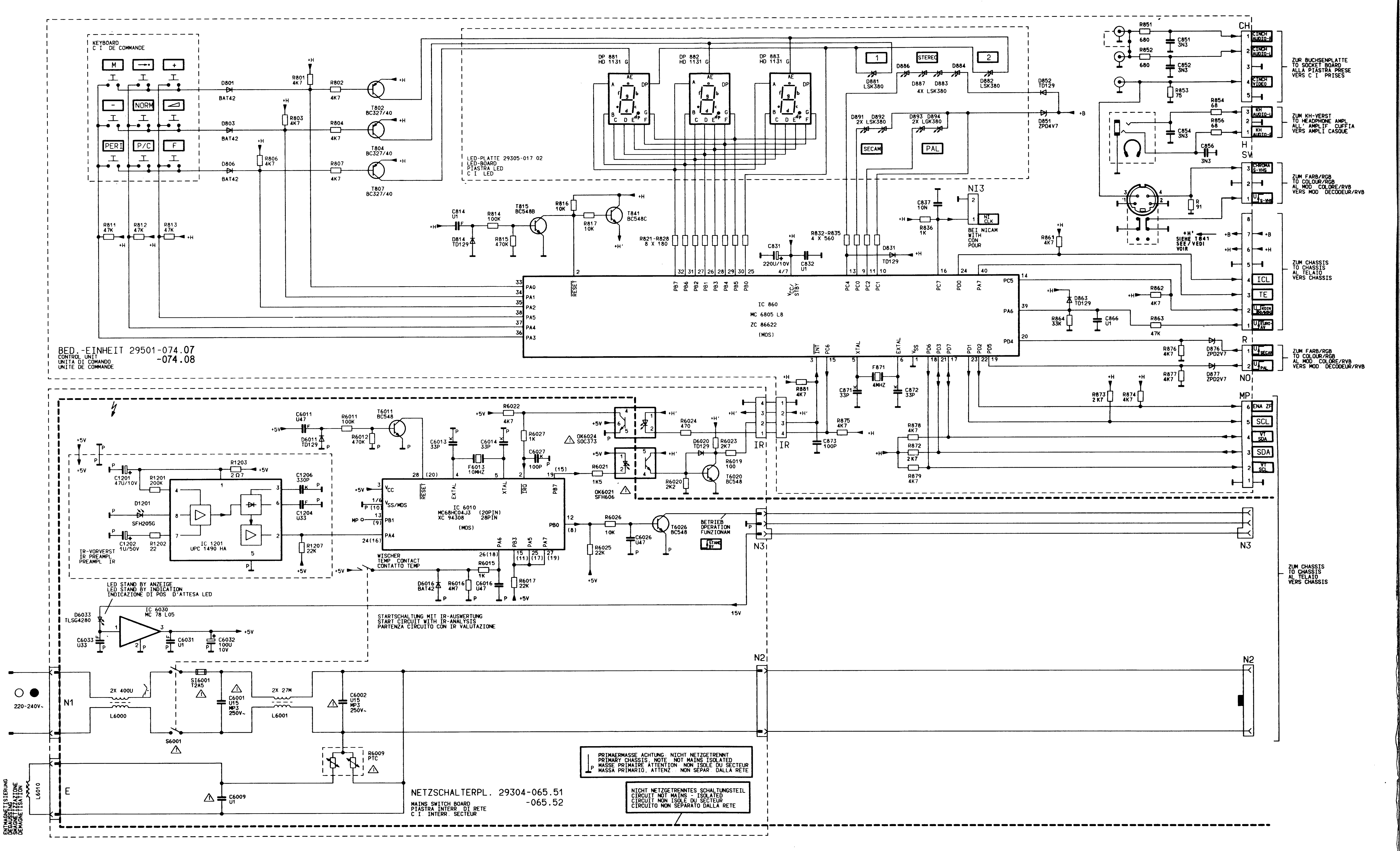


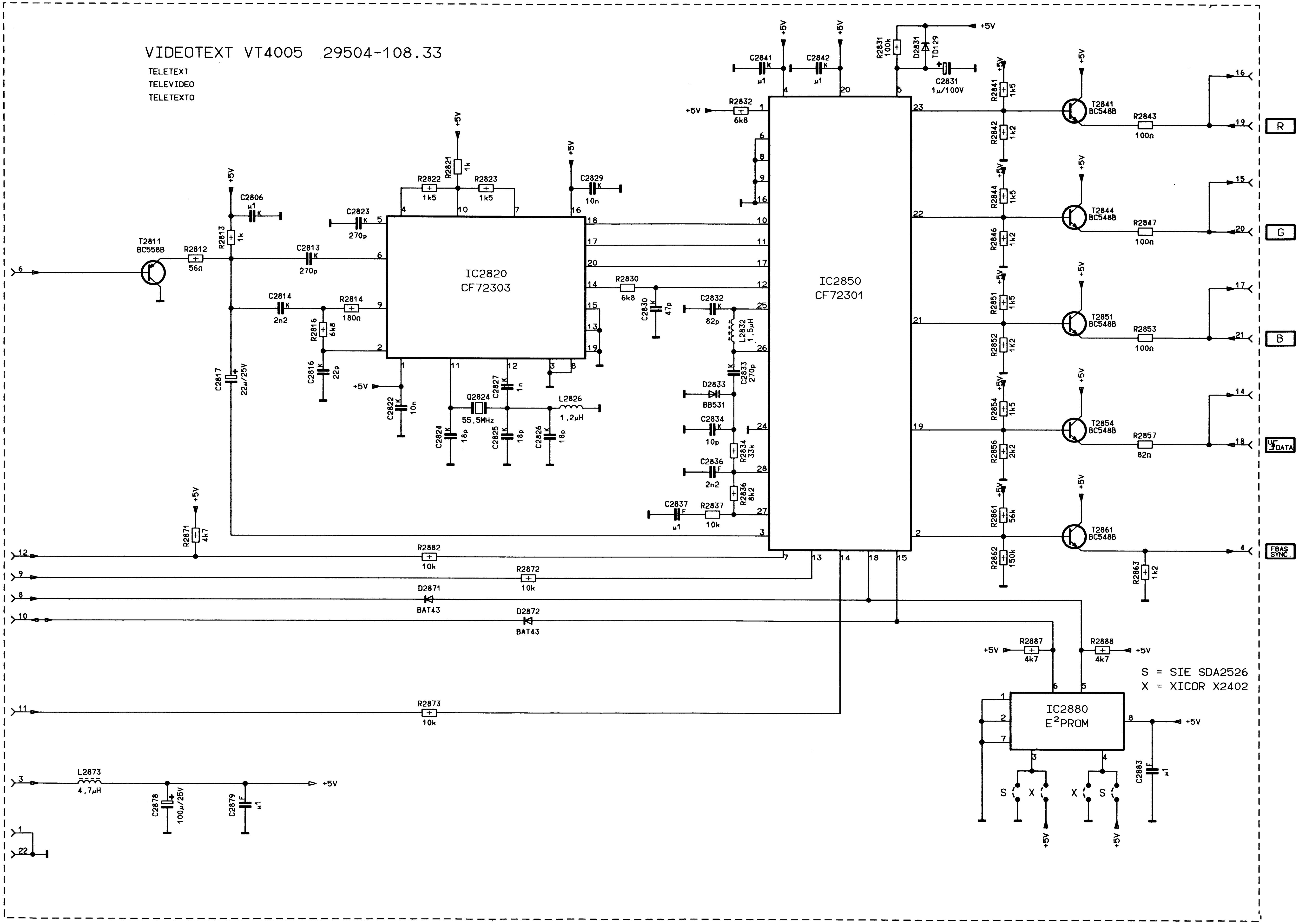
NETZSCHALTER
29304-065.51
CHASSIS/TELAIO
N3
BEDIENEINHEIT
CONTROL UNIT
UNITA DI COMANDO
WISCHER
TEMP CONTACT
CONTATTO TEMP
ENTMAGNETISIERUNG
DEGAUSING
SMAGNETIZZAZIONE
IC1201
IC 6030
IC 6010
IC6010
OK6021
OK6024
IR
N2
N1
S6001
L6000
L6001
SI6001
T2A5
29304-540.51/4B(05)

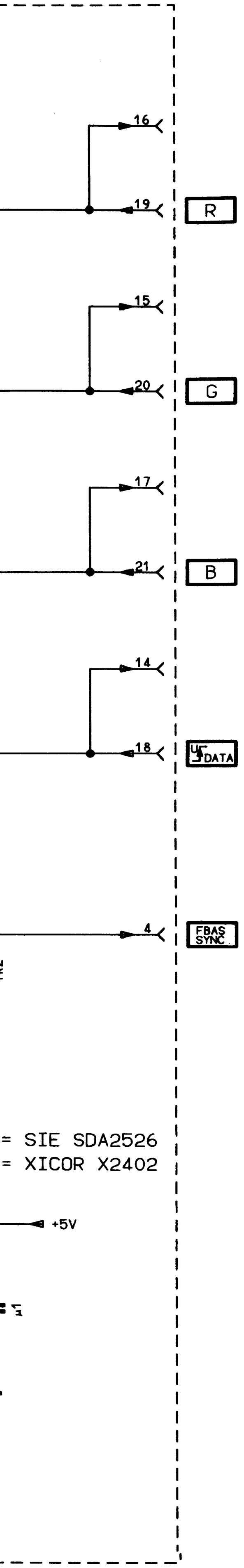


KEYBOARD
C I DE COMMANDE
M
NORM
PERI
P/C
F
LED-PLATTE 29305-017 02
LED-BOARD
PIASTRA LED
C I LED
BED.-EINHEIT 29501-074.07
-074.08
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
IR-VORVERST
IR PREAMPL
PREAMPL IR
IC 1201
UPC 1490 HA
IC 6010
MC68HC04J3 (20PIN)
XC 94308 28PIN
(MOS)
WISCHER
TEMP CONTACT
CONTATTO TEMP
LED STAND BY ANZEIGE
LED STAND BY INDICATION
INDICAZIONE DI POS D'ATTESA LED
IC 6030
MC 78 L05
STARTSCHALTUNG MIT IR-AUSWERTUNG
START CIRCUIT WITH IR-ANALYSIS
PARTENZA CIRCUITO CON IR VALUTAZIONE
220-240V~
N1
E
ENTMAGNETISIERUNG
DEGAUSSING
SMAGNETIZZAZIONE
DEMAGNETISATION
NETZSCHALTERPL. 29304-065.51
-065.52
MAINS SWITCH BOARD
PIASTRA INTERR DI RETE
C I INTERR SECTEUR
PRIMARMASSE ACHTUNG NICHT
PRIMARY CHASSIS NOTE NOT
MASSE PRIMAIRE ATTENTION NO
MASSA PRIMARIO ATTENZ NON
NICHT NETZGETRENNT
CIRCUIT NOT MAINS
CIRCUIT NON ISOLE
CIRCUITO NON SEPAR

+C
U_SG
STECKER BR-CHASSIS
PLUG BR-CHASSIS
SPINA BR DELL TELAIO
BEDIENEINHEIT
CONTROL UNIT
UNITA DI COMANDO
R6019
ENTMAGNETISIERUNG
DEGAUSING
SMAGNETIZZAZIONE

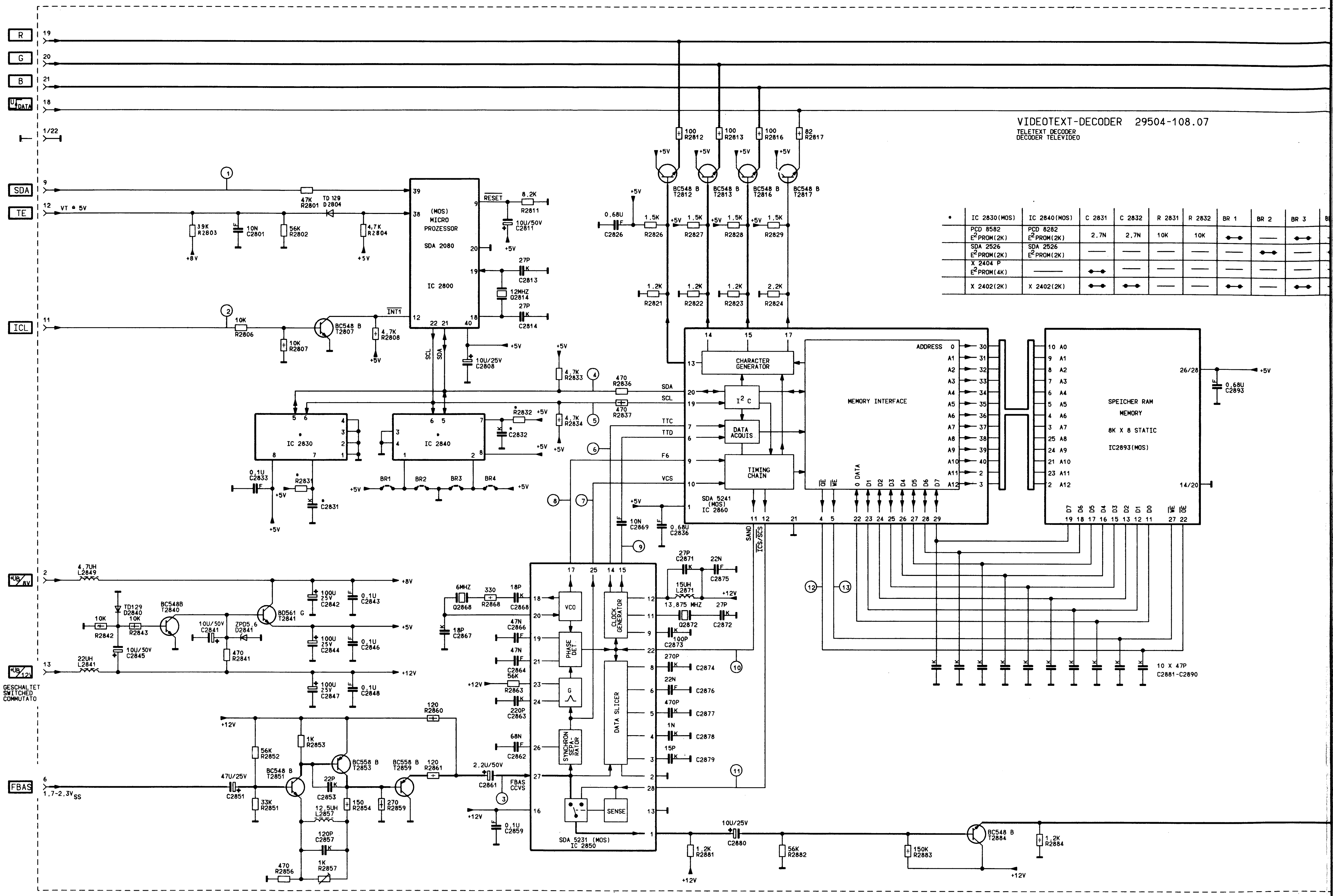

KEYBOARD
C I DE COMMANDE
M
NORM
PERI
P/C
F
D801 BAT42
D803 BAT42
D806 BAT42
R801 4K7
R802 4K7
R803 4K7
R804 4K7
R806 4K7
R807 4K7
T802 BC327/40
T804 BC327/40
T807 BC327/40
R811 47K
R812 47K
R813 47K
DP 881 HD 1131 G
DP 882 HD 1131 G
DP 883 HD 1131 G
LED-PLATTE 29305-017 02
LED-BOARD
PIASTRA LED
C I LED
STEREO
D881 LSK380
D882 LSK380
D886
D887 D883 4X LSK380
D884
D891 D892 2X LSK380
D893 D894 2X LGK380
SECAM
PAL
D852 TD129
D851 ZPD4V7
C814 U1
R814 100K
T815 BC548B
D814 TD129
R815 470K
R816 10K
R817 10K
T841 BC548C
R821-R828 8 X 180
C831 220U/10V
C832 U1
R832-R835 4 X 560
C837 10N
R836 1K
NI3
NI CLK
BEI NICAM WITH CON POUR
D831 TD129
R861 4K7
+H' SIEHE T841 SEE/VEDI VOIR
IC 860
MC 6805 L8
ZC 86622
(MOS)
RESET
VCC/STBY
INT
XTAL
EXTAL
VSS
D863 TD129
R864 33K
C866 U1
R862 4K7
R863 47K
F871 4MHZ
C871 33P
C872 33P
R881 4K7
BED.-EINHEIT 29501-074.07
-074.08
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
R851 680
R852 680
C851 3N3
C852 3N3
R853 75
R854 68
R856 68
C854 3N3
C856 3N3
R 91
CH
CINCH AUDIO-R
CINCH AUDIO-L
CINCH VIDEO
ZUR BUCHSENPLATTE
TO SOCKET BOARD
ALLA PIASTRA PRESE
VERS C I PRISES
H
KH AUDIO-L
KH AUDIO-R
ZUM KH-VERST
TO HEADPHONE AMPL
ALL' AMPLIF CUFFIA
VERS AMPLI CASQUE
SV
CHROMA S-VHS
U S-VHS
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD COLORE/RVB
VERS MOD DECODEUR/RVB
ICL
TE
U NORM VIDEO
U EURO AV
ZUM CHASSIS
TO CHASSIS
AL TELAIO
VERS CHASSIS
R
NO
R876 4K7
R877 4K7
D876 ZPD2V7
D877 ZPD2V7
U SECAM
U PAL
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD COLORE/RVB
VERS MOD DECODEUR/RVB
MP
ENA ZF
SCL
SDA
R873 2K7
R874 4K7
R875 4K7
R878 4K7
R872 2K7
R879 4K7
C873 100P
IR
C6011 U47
R6011 100K
T6011 BC548
D6011 TD129
R6012 470K
C6013 33P
C6014 33P
F6013 10MHZ
R6022 4K7
R6027 1K
C6027 100P
OK6024 SOC373
R6024 470
D6020 TD129
R6023 2K7
R6019 100
T6020 BC548
R6021 1K5
R6020 2K2
OK6021 SFH606
IC 6010
MC68HC04J3 (20PIN)
XC 94308 28PIN
(MOS)
R6026 10K
C6026 U47
R6025 22K
T6026 BC548
BETRIEB
OPERATION
FUNZIONAM
STAND BY
N3
WISCHER
TEMP CONTACT
CONTATTO TEMP
R6015 1K
D6016 BAT42
R6016 4M7
C6016 U47
R6017 22K
C1201 47U/10V
R1201 200K
R1203 2Ω7
C1206 330P
C1204 U33
D1201 SFH205G
C1202 1U/50V
R1202 22
IC 1201
UPC 1490 HA
R1207 22K
IR-VORVERST
IR PREAMPL
PREAMPL IR
LED STAND BY ANZEIGE
LED STAND BY INDICATION
INDICAZIONE DI POS D'ATTESA LED
D6033 TLSG4280
IC 6030 MC 78 L05
C6033 U33
C6031 U1
C6032 100U 10V
STARTSCHALTUNG MIT IR-AUSWERTUNG
START CIRCUIT WITH IR-ANALYSIS
PARTENZA CIRCUITO CON IR VALUTAZIONE
15V
ZUM CHASSIS
TO CHASSIS
AL TELAIO
VERS CHASSIS
N2
220-240V~
N1
2X 400U
L6000
S6001
SI6001 T2A5
C6001 U15 MP3 250V~
2X 27M
L6001
C6002 U15 MP3 250V~
R6009 PTC
L6010
E
C6009 U1
ENTMAGNETISIERUNG
DEGAUSING
SMAGNETIZZAZIONE
DEMAGNETIZATION
NETZSCHALTERPL. 29304-065.51
-065.52
MAINS SWITCH BOARD
PIASTRA INTERR DI RETE
C I INTERR. SECTEUR
PRIMAERMASSE ACHTUNG NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION NON ISOLE DU SECTEUR
MASSA PRIMARIO, ATTENZ NON SEPAR DALLA RETE
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE


VIDEOTEXT VT4005 29504-108.33
TELETEXT
TELEVIDEO
TELETEXTO
FBAS
TE
SDA
VT SCL
VT SDA
ICL
+UB/5V
T2811 BC558B
R2812 56Ω
R2813 1k
C2806 µ1
C2813 270p
C2814 2n2
R2814 180Ω
R2816 6k8
C2816 22p
C2817 22µ/25V
C2823 270p
R2822 1k5
R2821 1k
R2823 1k5
C2829 10n
IC2820 CF72303
C2822 10n
Q2824 55,5MHz
C2824 18p
C2825 18p
C2827 1n
C2826 18p
L2826 1,2µH
R2830 6k8
C2830 47p
C2832 82p
L2832 1,5µH
C2833 270p
D2833 BB531
C2834 10p
R2834 33k
C2836 2n2
R2836 8k2
C2837 µ1
R2837 10k
C2841 µ1
C2842 µ1
R2832 6k8
R2831 100k
D2831 TD129
C2831 1µ/100V
IC2850 CF72301
R2841 1k5
R2842 1k2
T2841 BC548B
R2843 100Ω
R2844 1k5
R2846 1k2
T2844 BC548B
R2847 100Ω
R2851 1k5
R2852 1K2
T2851 BC548B
R2853 100Ω
R2854 1k5
R2856 2k2
T2854 BC548B
R2857 82Ω
R2861 56k
R2862 150k
T2861 BC548B
R2863 1k2
R
G
B
UE DATA
FBAS SYNC
R2871 4k7
R2882 10k
R2872 10k
D2871 BAT43
D2872 BAT43
R2887 4k7
R2888 4k7
S = SIE SDA2526
X = XICOR X2402
IC2880 E²PROM
C2883 µ1
R2873 10k
L2873 4,7µH
C2878 100µ/25V
C2879 µ1
+5V


16
19
R
15
20
G
17
21
B
14
18
U DATA
4
FBAS SYNC.

= SIE SDA2526
= XICOR X2402

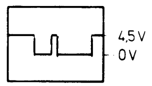
+5V


R
G
B
U DATA
SDA
TE
ICL
UB/8V
UB/12V
GESCHALTET
SWITCHED
COMMUTATO
FBAS
1,7-2,3V SS
(MOS) MICRO PROZESSOR
SDA 2080
IC 2800
IC 2830
IC 2840
BR1
BR2
BR3
BR4
CHARACTER GENERATOR
I2 C
DATA ACQUIS
TIMING CHAIN
SDA 5241 (MOS) IC 2860
MEMORY INTERFACE
SPEICHER RAM
MEMORY
8K X 8 STATIC
IC2893(MOS)
VCO
PHASE DET
CLOCK GENERATOR
DATA SLICER
SYNCHRON SEPARATOR
SENSE
SDA 5231 (MOS) IC 2850
10 X 47P
C2881-C2890
+5V
+8V
+12V

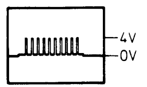
VIDEOTEXT-DECODER 29504-108.07

TELETEXT DECODER
DECODER TELEVIDEO

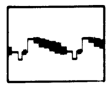
•	IC 2830(MOS)	IC 2840(MOS)	C 2831	C 2832	R 2831	R 2832	BR 1	BR 2	BR 3
	PCD 8582 E^2PROM(2K)	PCD 8282 E^2PROM(2K)	2,7N	2,7N	10K	10K	●—●	—	●—●
	SDA 2526 E^2PROM(2K)	SDA 2526 E^2PROM(2K)	—	—	—	—	—	●—●	—
	X 2404 P E^2PROM(4K)	—	●—●	—	—	—	—	—	—
	X 2402(2K)	X 2402(2K)	●—●	●—●	—	—	●—●	—	●—●



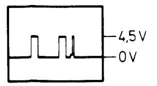
① BITFOLGE JE NACH TASTENDRUCK (BILD TASTE 1) 100 µsec/cm



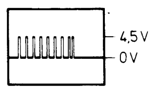
② ICL-TV-10BIT CLOCK 100 µsec/cm



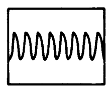
③ FBAS DC +4V AC 1,5 V_{SS} 10 µsec/cm



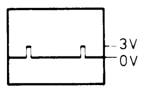
④ 100 µsec/cm



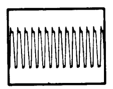
⑤ 100 µsec/cm



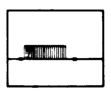
⑥ DC +4 V/AC 3 V_{SS} 6,9 MHz 100 nsec/cm



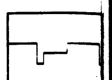
⑦ 10 µsec/cm



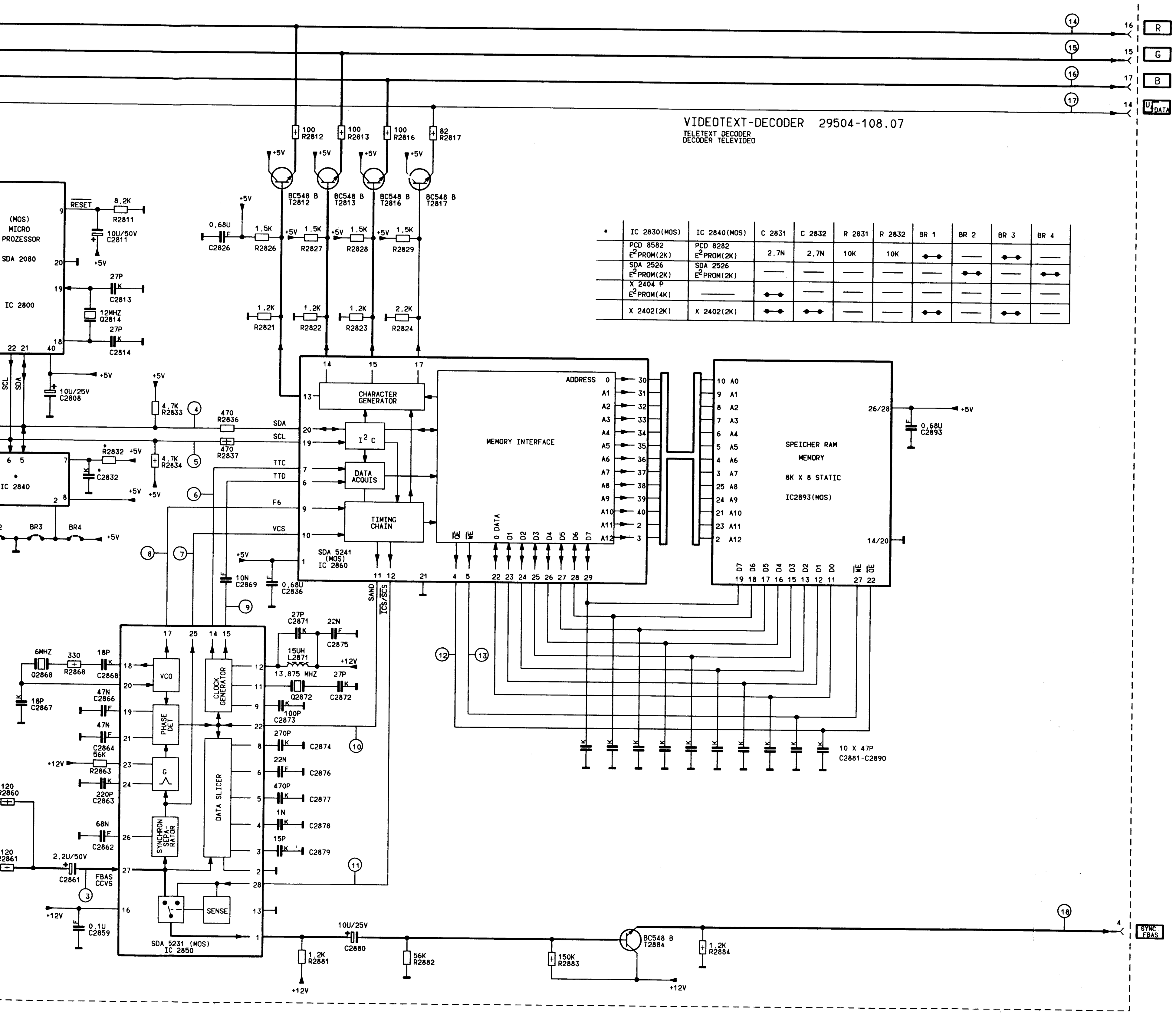
⑧ DC +6 V/AC 2 V_{SS} 6 MHz 200 nsec/cm



⑨ DC +4V/AC 3 V_{SS} 10 µsec/cm



⑩ DC +3V/AC 10 µsec/cm


VIDEOTEXT-DECODER 29504-108.07
TELETEXT DECODER
DECODER TELEVIDEO
MICRO PROZESSOR SDA 2080 IC 2800
IC 2840
CHARACTER GENERATOR
I² C
DATA ACQUIS
TIMING CHAIN
SDA 5241 (MOS) IC 2860
MEMORY INTERFACE
SPEICHER RAM MEMORY 8K X 8 STATIC IC2893(MOS)
VCO
PHASE DET
CLOCK GENERATOR
DATA SLICER
SYNCHRON SEPARATOR
SENSE
SDA 5231 (MOS) IC 2850
BC548 B T2812
BC548 B T2813
BC548 B T2816
BC548 B T2817
BC548 B T2884
10 X 47P C2881-C2890
R
G
B
U DATA
SYNC FBAS

*	IC 2830(MOS)	IC 2840(MOS)	C 2831	C 2832	R 2831	R 2832	BR 1	BR 2	BR 3	BR 4
	PCD 8582 E^2PROM(2K)	PCD 8282 E^2PROM(2K)	2,7N	2,7N	10K	10K	●—●	—	●—●	—
	SDA 2526 E^2PROM(2K)	SDA 2526 E^2PROM(2K)	—	—	—	—	—	●—●	—	●—●
	X 2404 P E^2PROM(4K)	—	●—●	—	—	—	—	—	—	—
	X 2402(2K)	X 2402(2K)	●—●	●—●	—	—	●—●	—	●—●	—

VT-Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videotext-Steckkarte muß die Videotext-Steckerplatte entfernt werden (* siehe Geräteschaltbild im Service Manual).

Der Einsteller R 2857 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2857 langsam nach links verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

VT (GB: Teletext) instalation and matching adjustment

When fitting the Videotext (GB: Teletext) plug-in board, the Videotext plug plate has to be removed (" see circuit diagram in the Service Manual).

The control R 2857 is set in the fully anti clockwise position when the unit is delivered (smallest treble boost: approx. 2 dB) If, with a perfect aerial signal character faults occur, turn R 2857 slowly anticlockwise until the faults disappear. Do not turn R 2857 up any further as error rate may increase again.

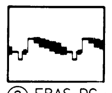
Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

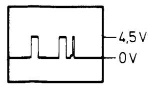
Montaggio e taratura d'addatamento della scheda ad innesto

Nel montare la scheda televideo togliere la piastrina televideo (* vedere lo schema del televisore nel manuale di servizio).

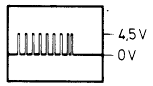
Il regolatore R 2857 viene fornito col cursore girato completamente all'estrema sinistra (minima esaltazione delle alte frequenze, ca. 2 dB). Se si manifestano errori di carattere, nonostante un perfetto segnale d'antenna, girare lentamente il cursore di R 2857 verso sinistra fino ad eliminare gli errori. Non girarlo oltre può riaumentare la presenza degli errori.

Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.

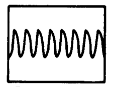

③ FBAS DC +4V
AC 1,5 V_{SS}
10 µsec/cm

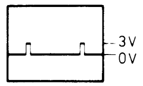


④ 100 µsec/cm

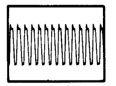


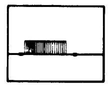
⑤ 100 µsec/cm

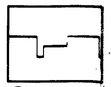

⑥ DC +4 V/AC 3 V_{SS}
6,9 MHz
100 nsec/cm

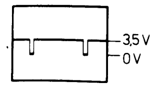


⑦ 10 µsec/cm

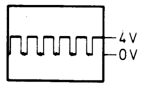

⑧ DC +6 V/AC 2 V_{SS}
6 MHz
200 nsec/cm


⑨ DC +4V/AC 3 V_{SS}
10 µsec/cm

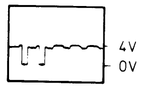

⑩ DC +3V/AC 4,5 V_{SS}
10 µsec/cm



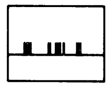
⑪ BEI TV +8V
(BILD VT)
10 µsec/cm

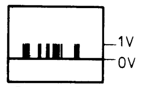


⑫ 500 nsec/cm

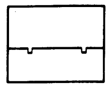


⑬ 500 nsec/cm

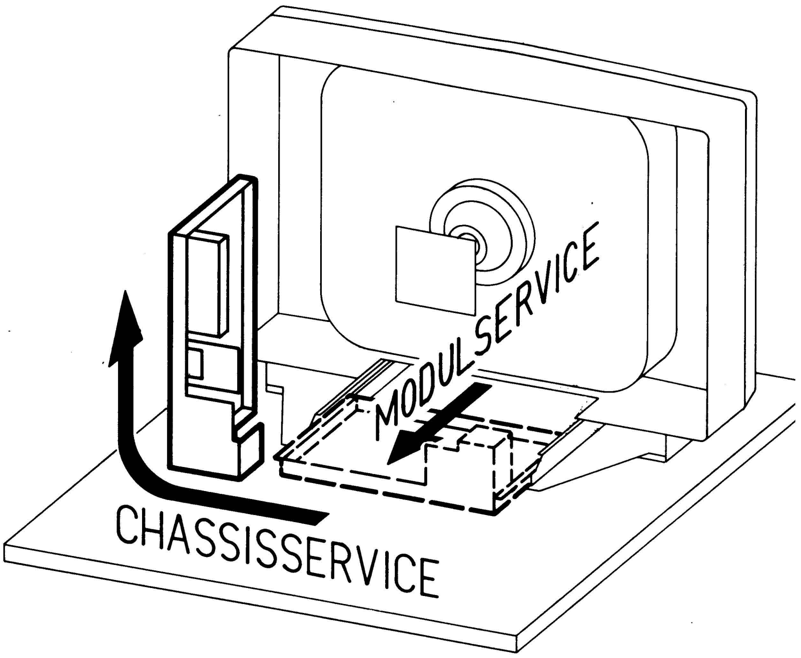

⑭ ⑮ DC +1,2 V
AC 0,7 V_{SS} ± 3 dB
⑯ 5 µsec/cm



⑰ TV 0V / VT +1V
(BILD MIX)
5 µsec/cm


⑱ SYNC VT DC +2V
AC 0,4 V_{SS}
10 µsec/cm

Servicestellung
Service position
Posizione di servizio



GRUNDIG

(D) Btx ★ 32700 #

SERVICE MANUAL
CUC 4635/4620

(D)

Diese Bedieneinheit hat zwei getrennte Massen!
Bei Messungen ist unbedingt darauf zu achten, daß diese beiden Potentiale nicht über Meßgeräte kurzgeschlossen werden!

(GB)

This control unit has two separate ground connections!
Be cautious not to shorten these two ground potentials via the leads of the measuring device!

(I)

Questa unità di comando ha due masse separate!
Durante le misure occorre assolutamente osservare, che i due potenziali non vengano corto circuitati tramite gli apparechi di missura!

ST 63 - 460	**(9.25528-01)**
ST 63 - 460 text	**(9.25528-02)**
ST 63 - 466	**(9.25555-01)**
ST 63 - 466 text	**(9.25555-02)**
ST 70 - 460	**(9.25500-01)**
ST 70 - 460 text	**(9.25500-02)**
ST 70 - 460 text GB	**(9.25500-65)**
ST 70 - 466	**(9.25554-01)**
ST 70 - 466 text	**(9.25554-02)**

Service Manual CUC 4635/4620 Sach. - Nr. 72010 - 003.20
Service Manual CUC 4635/4620 Order - No. 72010 - 003.20
Manuale di Servizio CUC 4635/4620 N. di 72010 - 003.20

D

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GB

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I

Indicate

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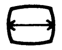
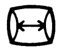
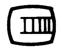
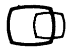
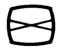
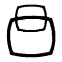
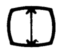
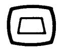
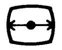
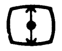
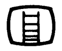
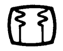
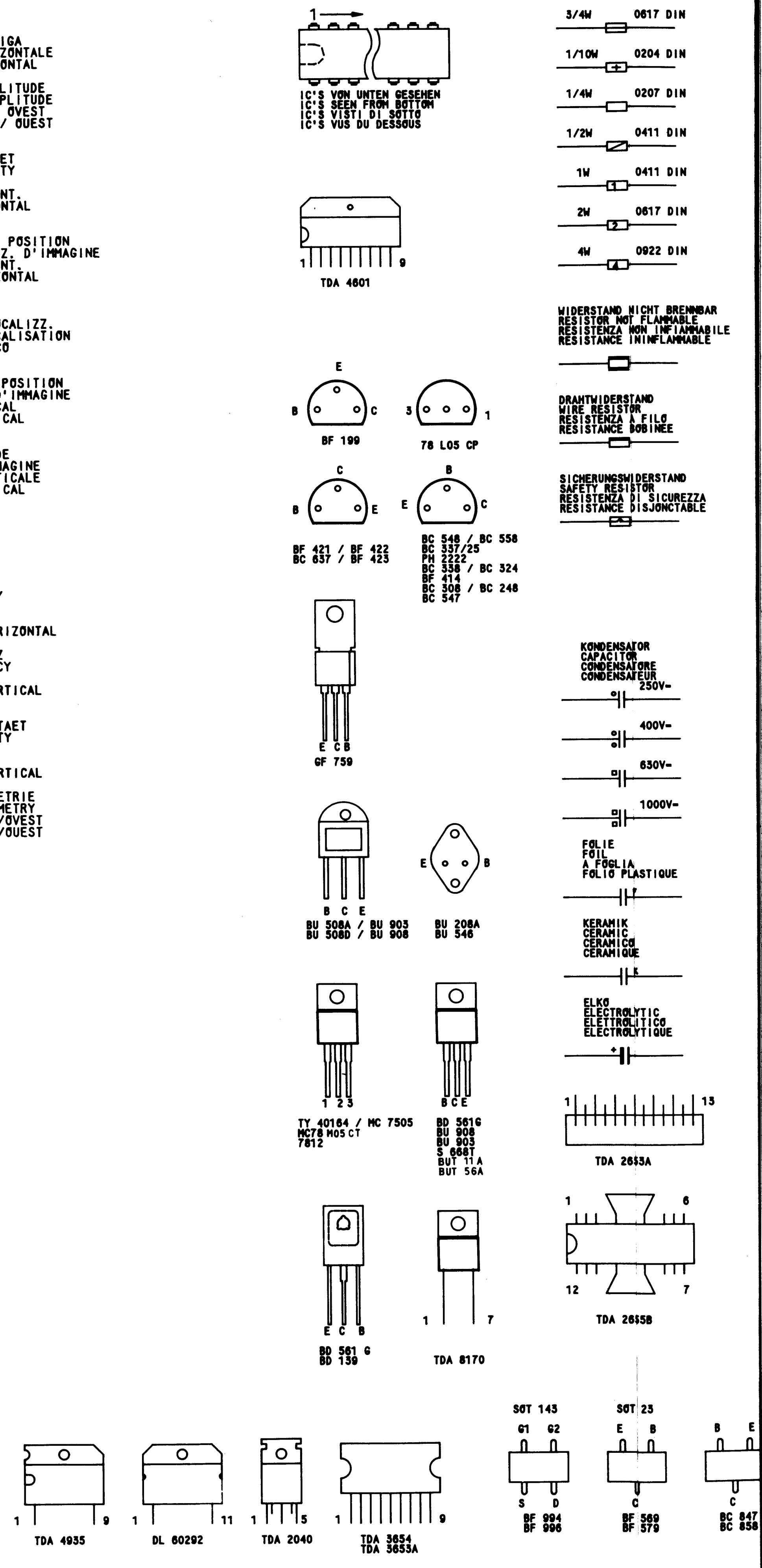
Symbole und ihre Bedeutung
Symbols and their meaning
Simboli e loro significati

P	PROGR.
P1	PROGR. TASTE PROGR. BUTTON TASTO PROGR. TOUCHE PROGR. PULS. PROGR.
M	SPEICHERTASTE MEMORY BUTTON TASTO DI MEMORIA TOUCHE MEMOIRE PULS. MEMORIA
NORM	NORMTASTE TV STANDARD SELECT. BUTTON COMMUT. DI NORMA TOUCHE DE NORME PULS. DE NORMA
▷▷+	FEINABST. + FINE TUNING + SINT. FINE + REGLAGE FIN + SINT. FINA +
-◁◁	FEINABST.- FINE TUNING - SINT. FINE - REGLAGE FIN - SINT. FINA -
—• I	SUCHLAUF BD I SELF-SEEK BAND I SINT. AUTOM. BANDA I RECHERCHE AUTOM. BANDE I SINT. AUTOM. BANDA-I
—• III	SUCHLAUF BANDWAHL III SELF-SEEK BAND III SINT. AUTOM. BANDA III RECHERCHE AUTOM. BANDE III SINT. AUTOM. BANDA-III
—• UHF	SUCHLAUF UHF SELF-SEEK UHF SINT. AUTOM. UHF RECHERCHE AUTOM. UHF SINT. AUTOM. UHF
⊿	LAUTSTAERKE VOLUME VOLUME SONORE VOLUMEN
FT	FEINABST. FINE TUNING SINT. FINE REGLAGE FIN SINT. FINA
C	KANALWAHL CHANNEL SEL. SELEZ. CANALE SELECT. DE CANAUX SELECCION CANAL
▷◁	BALANCE BILANCIAM. BALANCE BALANCE
—•	SUCHLAUF SELF-SEEK SINT. AUTOM. RECHERCHE AUTOM. SINTONIA AUTOMATICA
U I/III	SCHALTSP. BANDWAHL BAND SEL. SWITCHING VOLTAGE TENS. DI COMMUT. SELEZ. BANDA TENS. DE COMMUT. SELECT. BANDE TENS. CONMUT. SELEC. BANDA
U VHF	SCHALTSP. VHF SWITCHING VOLT. VHF TENS. DI COMMUT. VHF TENS. DE COMMUT. VHF TENS. CONMUT. VHF
U UHF	SCHALTSP. UHF SWITCHING VOLT. UHF TENS. DI COMMUT. UHF TENS. DE COMMUT. UHF TENS. CONMUT. UHF
U AFC	SCHALTSP. AFC SWITCHING VOLT. AFC TENS. DI COMMUT. AFC TENS. DE COMMUT. AFC TENS. CONMUT. CAF
U AV	SCHALTSP. AV AV SWITCHING VOLT. TENS. DI COMMUT. AV TENS. DE COMMUT. AV TENS. CONMUT. AV
U NORM	SCHALTSP. NORM SWITCHING VOLT. STANDARD TENS. DI COMMUT. NORMA TENS. DE COMMUT. STANDARD TENS. CONMUT. NORMA
U KOIN. 50/60HZ	SCHALTSP. KOINZ. SWITCHING VOLT. COINC. TENS. DI COMMUT. COINC. TENS. DE COMMUT. COINC. TENS. CONMUT. COINCIDENCIA
U EURO-AV	SCHALTSP. EURO-AV SWITCHING VOLT. EURO-AV TENS. DI COMMUT. EURO-AV TENS. DE COMMUT. NORME FR TENS. CONMUT. EURO-AV
U VQ	SCHALTSP. VIDEO QUELLE SWITCHING VOLT. VIDEO SOURCE TENS. DI COMMUT. SORG. VIDEO TENS. DE COMMUT. SOURCE VIDEO TENS. CONMUT. VIDEO
U DATA	SCHALTSP. DATENBETR. SWITCHING VOLT. DATA MODE TENS. DI COMMUT. DATI TENS. DE COMMUT. FONCT. DONNEES TENS. CONMUT. DATOS
U 4,5MHZ	SCHALTSP. 4,5 MHZ SWITCHING VOLT. 4,5 MHZ TENS. DI COMMUT. 4,5 MHZ TENS. DE COMMUT. 4,5 MHZ TENS. CONMUT. 4,5MHZ
U ⟋ τ	REGELSP. VERZOEGERT DELAYED CONTR. VOLTAGE TENS. DI CONTR. RITARD. TENS. DE REGUL. RETARDEE TENS. REGUL. RETARDADA
U ⟋ TUN.	ABSTIMMSP. TUNER TUNING VOLT. TUNER TENS. DI SINTONIA TUNER TENS. D'ACCORD TUNER TENS. SINTONIA AL TUNER
U ⟋ AFC	REGELSP. AFC AFC CONTROL VOLT. TENS. DI CONTR. AFC TENS. DE REGUL. AFC TENS. REGUL. CAF
U MUTE	STUMMSCHALTUNG MUTING SILENZIAMENTO SILENCIEUX MUTING
⎍	TASTIMPULS GATING PULSE IMPULSO A CADENZA IMPULS. DE DECLENCHEMENT IMP. PUERTA
⎍ VERT.	VERT. TASTIMPULS VERT. GATING PULSE IMP. A CADENZA VERT. IMP. TRAME IMP. CUADRO
∩∩ VERT.	VERT. PARABEL VERT. PARABOLA PARABOLA VERT. SIGNAL PARABOLIQUE SENAL PARABOL. VERT.
◿◿ VERT.	VERT. SAEGEZAHN VERT. SAW TOOTH DENTE DI SEGA VERT. SIGNAL DENT DE SCIE DIENTE DE SIERRA VERT.
⎍⎍ HOR.	HOR. ANSTEUERUNG HORIZ. DRIVE PILOTAGGIO ORIZZ. SYNCHR. LIGNES EXCITACION HORIZ.
⋀ REF.	REF. IMPULS REFERENCE PULSE IMP. DI RIFER. IMP. DE REFER. IMP. REFERENCIA HORIZ.
⊥	SCHUTZSCHALTUNG CIRCUIT PROTECTION CIRCUITO DI PROTEZIONE CIRCUIT DE SECURITE CIRCUITO DE PROTECCION
▷•◁	FARBTON TINT TINTA TEINTE TINTE
⊿ REF.	REF. LAUTSTAERKE VOLUME REF. VOLT. TENS. DI RIF. VOLUME TENS. DE REF. VOL. SONORE TENS. REF. VOLUMEN
☼	HELLIGKEIT BRIGHTNESS LUMINOSITA' LUMINOSITE BRILLO
◑	KONTRAST CONTRAST CONTRASTO CONTRASTE CONTRASTE
◕	FARBKONTRAST CONTRAST COLOUR CONTRASTO COLORE CONTRASTE COULEUR SATUR. COLOR
FBAS	FBAS-SIGNAL CCVS SIGNAL SEGNALE SVCC SIGNAL VIDEO COMPOSITE SENAL VIDEO COMPUESTA
SSC	SUPERSANDCASTLE
SB	STRAHLSTR. BEGR. BEAM CURRENT LIM. CORRENTE CATODICA MEDIA LIM. COUR. DE FAISCEAU CORRIENTE MEDIA DE HAZ
SSB	SPITZ. STRAHLSTR. BEGR. PEAK BEAM CURRENT LIMITING CORR. CATODICA DI PICCO LIM. DE FAISCEAU CRETE CORRIENTE PICO DE HAZ
R	ROT-SIGNAL RED SIGNAL SEGNALE ROSSO SIGNAL ROUGE SENAL ROJA
G	GRUEN-SIGNAL GREEN SIGNAL SEGNALE VERDE SIGNAL VERT SENAL VERDE
B	BLAU-SIGNAL BLUE SIGNAL SEGNALE BLU SIGNAL BLEU SENAL AZUL
Y	Y-SIGNAL SEGNALE Y SIGNAL Y SENAL Y
F	F-SIGNAL CHROMA SIGNAL SEGNALE F SIGNAL CHROMA SENAL CROMA
SW	SCHWARZWERT BLACK LEVEL LIVELLO DEL NERO NIVEAU DU NOIR NIVEL DE NEGRO
AUDIO	AUDIO-SIGNAL SEGNALE AUDIO SIGNAL AUDIO SENAL AUDIO
AUDIO-L	AUDIO SIGNAL LINKS AUDIO SIGNAL LEFT SEGNALE AUDIO SINISTRA SIGNAL AUDIO GAUCHE SENAL AUDIO IZQUIERDA
AUDIO-R	AUDIO SIGNAL RECHTS AUDIO SIGNAL RIGHT SEGNALE AUDIO DESTRA SIGNAL AUDIO DROIT SENAL AUDIO DERECHA
EURO-AV VIDEO	VIDEO SIGNAL EURO-AV SEGNALE VIDEO EURO-AV SIGNAL VIDEO NORME FR SENAL VIDEO EURO-AV
EURO-AV AUDIO-R	AUDIO SIGNAL EURO-AV RECHTS AUDIO SIGNAL EURO-AV RIGHT SEGNALE AUDIO EURO-AV DESTRA SIGNAL AUDIO NORME FR DROIT SENAL AUDIO DERECHA EURO-AV
EURO-AV AUDIO-L	AUDIO SIGNAL EURO-AV LINKS AUDIO SIGNAL EURO-AV LEFT SEGNALE VIDEO EURO-AV SINISTRA SIGNAL AUDIO NORME FR GAUCHE SENAL AUDIO IZQUIERDA EURO-AV
IR	IR-SIGNAL SEGNALE IR SIGNAL IR SENAL IR
U_{G1}	SPG. GITTER 1 VOLTAGE GRID 1 TENS. GRIGLIA 1 TENS. GRILLE G1 TENS. REJILLAS G-1
$U_{FOC.}$	FOKUSSP. FOCUSSING VOLTAGE TENS. DI FOCALIZZ. TENS. DE FOCALIS. TENS. FOCALIZACION
U_H ⚡	HOCHSPANNUNG EHT VOLTAGE ALTA TENS. HAUTE TENS. MAT
U_{SG}	SCHIRMGITTERSP. SCREEN-GRID VOLT. TENS. GRIGLIA SCHERMO TENS. GRILLE-ECRAN TENS. ACELERADORES
TE	TEXT ENABLE
SCL	I²C-CLOCK I²C-BUS
VCL	VCR-CLOCK
ICL	I-BUS-CLOCK

SDA	DATEN DATA DATI DONNEES DATA
ZF	ZF-SIGNAL IF SIGNAL SEGNALE FI SIGNAL FI SENAL DE FI
PP	PAL PRIORITAET PAL PRIORITY PRIORITA' PAL PRIORITE PAL PRIORIDAD PAL
F-DIR.	F-SIGNAL DIREKT F SIGNAL DIRECT SEGNALE F DIRETTO SIGNAL CHROMA DIRECT SENAL CROMA DIRECTA
F_V	FV-SIGNAL FV SIGNAL SEGNALE FV SIGNAL FY SENAL FV
F_U	FU-SIGNAL FU SIGNAL SEGNALE FU SIGNAL FX SENAL FU
F-VERZ	F-SIGNAL VERZOEGERT F SIGNAL DELAYED SEGNALE F RITARD. SIGNAL CHROMA RETARDE SENAL CROMA RETARDADA
DL	VERZOEGERUNGSLEITUNG DELAY LINE LINEA DI RITARDO LIGNE A RETARD LINEA DE RETARDO
U SCHUTZ	SCHALTSP./SCHUTZFUNKTION SWITCHING VOLT. /PROTECTIVE FUNC. TENS. DI COMMUT. /FUNZ.DI PROTEZ. TENS. DE COMMUT. / SECURITE TENS. CONMUT./PROTECCION
FBAS SYNC.	FBAS/SYNC.-SIGNAL CCVS/SYNC. SIGNAL SEGNALE SINCR. /VIDEO COL. COMP. SIGNAL SYNC./VIDEO COMPOSITE SENAL SINCR./VIDEO COMPUESTA
SYNC.	SYNC.-SIGNAL SYNC. SIGNAL SEGNALE SINCR. SIGNAL SYNC. SENAL DE SINCRONISMOS
U 50/60 HZ	SCHALTSP. 50/60HZ SWITCHING VOLT.50/60HZ TENS. DI COMMUT. 50/60HZ TENS. DE COMMUT. 50/60HZ TENS. CONMUT. 50/60HZ
U BTX	SCHALTSP. BTX SWITCHING VOLT. BTX (VIEWDATA) TENS. COMMUT. VIDEOTEL TENS. COMMUT. VIDEOTEXTE TENS. CONMUT. VIDEOTEXTO
SYNC. VT	SYNC. VT SYNC. VT (TELETEXT) SINCR. TELEVIDEO SYNC. TELETEXTE SINCR. TELETEXTO
SYNC. BTX	SYNC. BTX SYNC. BTX (VIEWDATA) SINCR. VIDEOTEL SYNC. VIDEOTEXTE SINCR. VIDEOTEXTO
U RESET	SCHALTSP. RESET SWITCHING VOLT. RESET TENS. COMMUT.,RESET TENS. CONMUT. RESET
U STAND BY	SCHALTSP. STAND BY SWITCHING VOLT. STAND BY TENS. COMMUT. STAND BY TENS. COMMUT.,VEILLE TENS. CONMUT. STAND BY
U HUB	SCHALTSP. HUB SWITCHING VOLT. DEVIATION TENS. COMMUT. DEVIAZIONE TENS. COMMUT.,DEVIATION TENS. CONMUT. DESVIACION
U DEEM	SCHALTSP. DEEM SWITCHING VOLT. DEEMPHASIS TENS. COMMUT. DEENFASI TENS. COMMUT.,DESACCENT. TENS. CONMUT. DEENFASIS
U CAM. AV	SCHALTSP. KAMERA WIEDERG. SWITCHING VOLT. CAMERA PLAYBACK TENS. COMMUT. RIPRODUZ. TELECAM. TENS. COMMUT. REPROD. CAMERA TENS. CONMUT. REPROD. CAMARA
U LED	SCHALTSP. LED LED SWITCHING VOLT. LED TENS. DI COMMUT. TENS. DE COMMUT. LED TENS. CONMUT. LED
	ZEILENBREITE LINE WIDTH LARGHEZZA DI RIGA AMPLITUDE HORIZONTALE AMPLITUD HORIZONTAL
	OST / WEST AMPLITUDE EAST / WEST AMPLITUDE AMPIEZZA EST / OVEST AMPLITUDE EST / OUEST AMPLITUD E/O
	HOR. LINEARITAET HORIZ. LINEARITY LINEAR. ORIZZ. LINEAR. HORIZONT. LINEAL. HORIZONTAL
	BILDLAGE HOR. HORIZ. PICTURE POSITION POSIZIONE ORIZZ. D'IMMAGINE CADRAGE HORIZONT. CENTRADO HORIZONTAL
	FOKUSREGLER FOCUS CONTROL REGOLAT. DI FOCALIZZ. REGLAGE DE FOCALISATION CONTROL DE FOCO
	BILDLAGE VERT. VERT. PICTURE POSITION POSIZ. VERT. D'IMMAGINE CADRAGE VERTICAL CENTRADO VERTICAL
	BILDAMPLITUDE FIELD AMPLITUDE AMPIEZZA D'IMMAGINE AMPLITUDE VERTICALE AMPLITUD VERTICAL
	TRAPEZ TRAPEZIUM TRAPEZIO TRAPEZE TRAPECIO
	HOR. FREQUENZ HOR. FREQUENCY FREQ. ORIZZ. FREQ. HORIZ. FRECUENCIA HORIZONTAL
	VERT. FREQUENZ VERT. FREQUENCY FREQ. VERT. FRECUENCIA VERTICAL
	VERT. LINEARITAET VERT. LINEARITY LINEAR. VERT. LINEAR. VERT. LINEALIDAD VERTICAL
	OST/WEST SYMMETRIE EAST/WEST SYMMETRY SIMMETRIA EST/OVEST SYMMETRIE EST/OUEST SIMETRIA E/O

Wichtige Schaltzeichen
Important circuit simbols
Segni circuitali importanti


1
IC'S VON UNTEN GESEHEN
IC'S SEEN FROM BOTTOM
IC'S VISTI DI SOTTO
IC'S VUS DU DESSOUS
1
9
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BF 199
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1
78 L05 CP
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BF 421 / BF 422
BC 637 / BF 423
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BU 508D / BU 908
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BU 208A
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1 2 3
TY 40164 / MC 7505
MC78 M05 CT
7812
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BUT 11A
BUT 56A
E C B
BD 561 G
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7
TDA 8170
3/4W
0617 DIN
1/10W
0204 DIN
1/4W
0207 DIN
1/2W
0411 DIN
1W
0411 DIN
2W
0617 DIN
4W
0922 DIN
WIDERSTAND NICHT BRENNBAR
RESISTOR NOT FLAMMABLE
RESISTENZA NON INFIAMMABILE
RESISTANCE ININFLAMMABLE
DRAHTWIDERSTAND
WIRE RESISTOR
RESISTENZA A FILO
RESISTANCE BOBINEE
SICHERUNGSWIDERSTAND
SAFETY RESISTOR
RESISTENZA DI SICUREZZA
RESISTANCE DISJONCTABLE
KONDENSATOR
CAPACITOR
CONDENSATORE
CONDENSATEUR
250V-
400V-
630V-
1000V-
FOLIE
FOIL
A FOGLIA
FOLIO PLASTIQUE
KERAMIK
CERAMIC
CERAMICO
CERAMIQUE
ELKO
ELECTROLYTIC
ELETTROLITICO
ELECTROLYTIQUE
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13
TDA 2653A
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TDA 3653A
SOT 143
G1
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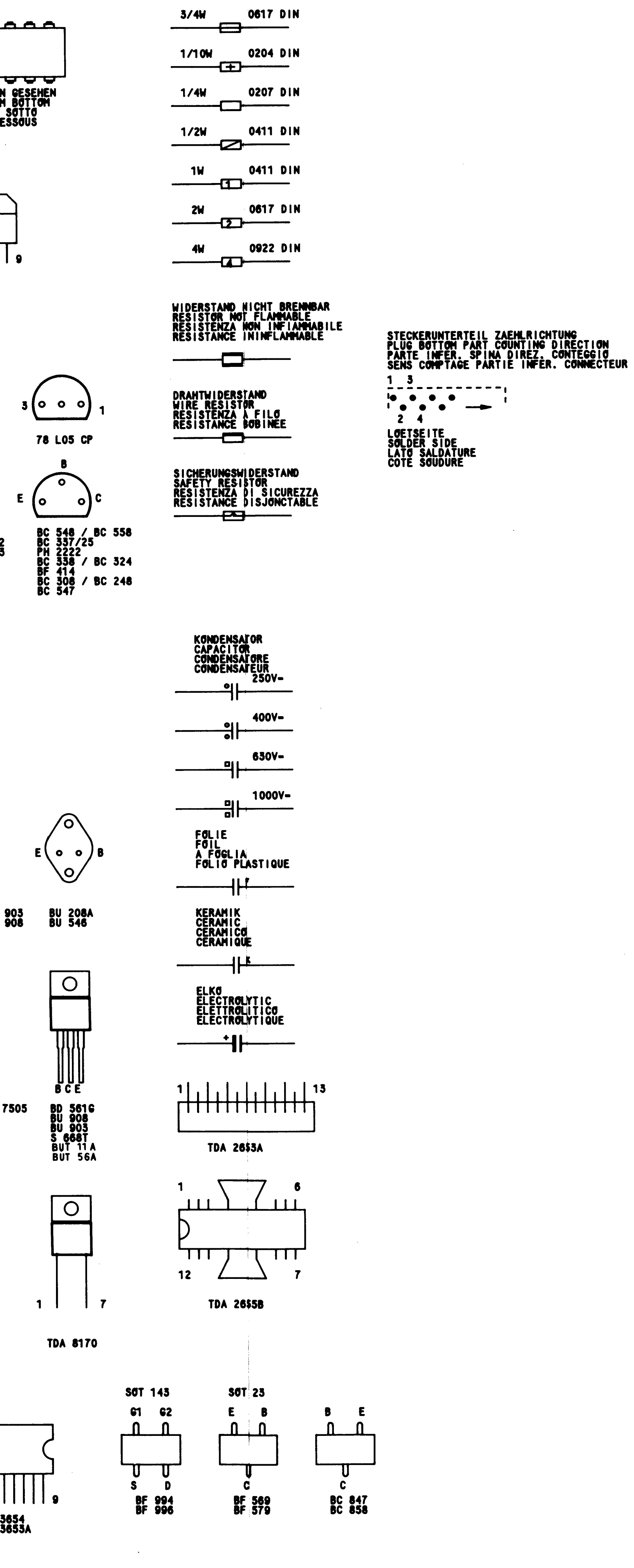
N GESEHEN
M BOTTOM
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9
3/4W 0617 DIN
1/10W 0204 DIN
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1/2W 0411 DIN
1W 0411 DIN
2W 0617 DIN
4W 0922 DIN
WIDERSTAND NICHT BRENNBAR
RESISTOR NOT FLAMMABLE
RESISTENZA NON INFIAMMABILE
RESISTANCE ININFLAMMABLE
STECKERUNTERTEIL ZAEHLRICHTUNG
PLUG BOTTOM PART COUNTING DIRECTION
PARTE INFER. SPINA DIREZ. CONTEGGIO
SENS COMPTAGE PARTIE INFER. CONNECTEUR
1 3
2 4
LOETSEITE
SOLDER SIDE
LATO SALDATURE
COTE SOUDURE
3 1
78 L05 CP
DRAHTWIDERSTAND
WIRE RESISTOR
RESISTENZA A FILO
RESISTANCE BOBINEE
B
E C
SICHERUNGSWIDERSTAND
SAFETY RESISTOR
RESISTENZA DI SICUREZZA
RESISTANCE DISJONCTABLE
BC 548 / BC 558
BC 337/25
PH 2222
BC 338 / BC 324
BF 414
BC 308 / BC 248
BC 547
KONDENSATOR
CAPACITOR
CONDENSATORE
CONDENSATEUR
250V-
400V-
630V-
1000V-
FOLIE
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CERAMIQUE
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BC 847
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9
3654
3653A

ACHTUNG: Ⓓ **BEI EINGRIFFEN INS GERÄT SIND DIE SICHERHEITSVORSCHRIFTEN NACH VDE701(REPARATURBEZOGEN) BZW.VDE0860/IEC65 (GERÄTEBEZOGEN) ZU BEACHTEN.**

⚠ IM REPARATURFALL DÜRFEN NUR ORIGINALBAUTEILE VERWENDET WERDEN !

ACHTUNG! Ⓓ VORSCHRIFTEN BEIM UMGANG MIT MOS - BAUTEILEN BEACHTEN !

ATTENTION: GB **PLEASE OBSERVE THE APPLICABLE SAFETY REQUIREMENTS ACCORDING TO VDE 701 (CONCERNING REPAIRS) AND VDE 0860/IEC 65 (CONCERNING TYPE OF PRODUCT).**

⚠ ONLY USE COMPONENTS WITH THE SAME SPECIFICATION FOR REPLACEMENT !

ATTENTION! GB OBSERVE MOS COMPONENTS HANDLING INSTRUCTIONS WHEN SERVICING !

ATTENTION: Ⓕ **PRIERE D'OBSERVER LES PRESCRIPTIONS DE SECURITE VDE 701 (CONCERNANT LES REPARATIONS) ET VDE 0860/IEC 65 (CONCERNANT LE TYPE DE PRODUIT).**

⚠ EN CAS DE REMPLACEMENT N'UTILISER QUE DES COMPOSANTS DES MEMES SPECIFICATIONS !

ATTENTION! Ⓕ LORS DE LA MANIPULATION DES CIRCUITS MOS , RESPECTER LES PESCRIPTIONS MOS !

ATTENZIONE: Ⓘ **OSSERVARNE LE CORRISPONDENTI PRESCRIZIONI DI SICUREZZA VDE 701 (CONCERNENTE SERVIZIO) E VDE 0860/IEC 65 (CONCERNENTE IL TIPO DI PRODOTTO).**

⚠ IN CASO DI SOSTITUZIONE IMPIEGARE SOLO COMPONENTI CON LE STESSE CARATTERISTICHE !

ATTENZIONE! Ⓘ OSSERVARE LE RELATIVE PRESCRIZIONI DURANTE, LAVORI CON COMPONENTI MOS !

ATENCION: Ⓔ **RECOMENDAMOS LAS NORMAS DE SEGURIDAD VDE U OTRAS NORMAS EQUIVALENTES. POR EJEMPLO : VDE 701 PARA REPARACIONES, VDE 0860/IEC 65 PARA APARATOS.**

⚠ EN CASO DE REPARACION UTILIZAR UNICAMENTE REPUESTOS ORIGINALES.

ATENCION! Ⓔ DURANTE LA REPARACION OBSERVAR LAS NORMAS SOBRE COMPONENTES MOS !

Ⓓ

Sicherheitsbestimmungen

Nach Servicearbeiten ist bei Geräten der Schutzklasse II die Messung des Isolationswiderstandes und des Ableitstromes bei eingeschaltetem Gerät nach **VDE 0701 / Teil 200** bzw. der am Aufstellort geltenden Vorschrift, durchzuführen!
Dieses Gerät entspricht der Schutzklasse II, erkennbar durch das Symbol ▣ .

Messen des Isolationswiderstandes nach VDE 0701.
Isolationsmesser (U_{Test} = 500 V-) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:

$R_{Isol} \geq 2$ MΩ bei $U_{Test} = 500$ V-
Meßzeit: ≥ 1 s

Anmerkung: Bei Geräten der Schutzklasse II kann durch Entladungswiderstände der Meßwert des Isolationswiderstandes konstruktionsbedingt < 2 MΩ sein. In diesen Fällen ist die Ableitstrommessung maßgebend.

GB

Safety Standard Compliance

After service work on a product conforming to the Safety Class II, the insulating resistance and the leakage current with the product switch on must be checked according to **VDE 0701** or to the specification valid at the installation location!
This product conforms to the Safety Class II, as identified by the symbol ▣

Measurement of the Insulation Resistance to VDE 0701
Connect an Insulation Meter (U_{Test} = 500 V-) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sokkets, buttons, decorative parts,etc.) made from metal or metal alloy. The product is fault free if

$R_{Isol} \geq 2$ MΩ at $U_{Test} = 500$ V-
Measuring time: ≥ 1s

Comment: On product conforming to the Safety class II the Insulation Resistance can be < 2 MOhm, dependent contructively on discharge resistors. In this cases, the check of the leakage current is significant.

Ⓘ

Norme di sicurezza

Successivamente ai lavori di riparazione., negli apparecchi della classe di protezione. Il occorre effettuare la misura della resistenza di isolamento e della corrente di dispersione quando l'apparecchio e'acceso, secondo le norme **VDE 0701 / parte 200** e rispettivamente le norme locali!
Questo apparecchio corrisponde alla classe di protezione II ed è riconoscibile dal simbolo ▣

Misura della resistenza di isolamento secondo VDE 0701
Applicare il misuratore di isolamento ($tens._{prova}$ = 500V-) contemporaneamente ai due poli di rete e tra tutte le parti del mobile e delle funzioni (antenna, prese, tasti, mascherine, viti ecc.) in metallo o in lega metallica. L'apparecchio non presenta difetti quando:

$R_{isol} \geq 2$ MΩ con $tens._{prova} = 500$ V-
Tempo di misura: ≥ 1s

Nota: Negli apparecchi della classe II, che per motivi costruttivi dispongono di resistenze di dispersione, il valore di misura della resistenza di isolamento può essere inferiore a < 2 MΩ. In questi casi è determinante la misura della corrente di dispersione.

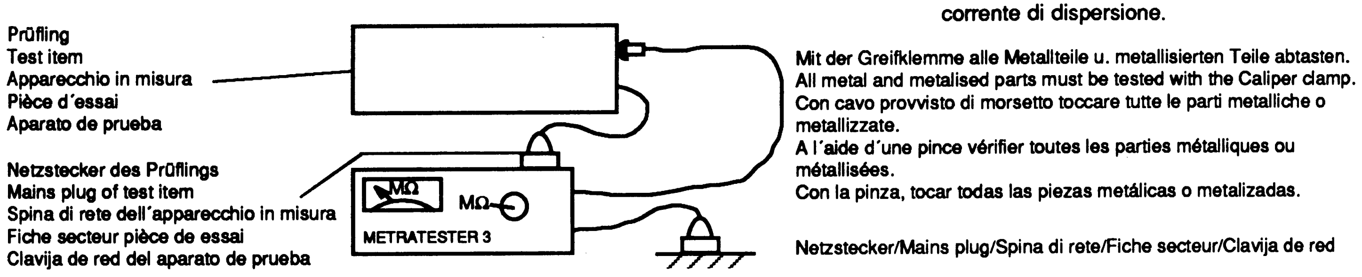
Prüfling
Test item
Apparecchio in misura
Pièce d'essai
Aparato de prueba
Netzstecker des Prüflings
Mains plug of test item
Spina di rete dell'apparecchio in misura
Fiche secteur pièce de essai
Clavija de red del aparato de prueba
MΩ
MΩ
METRATESTER 3
Mit der Greifklemme alle Metallteile u. metallisierten Teile abtasten.
All metal and metalised parts must be tested with the Caliper clamp.
Con cavo provvisto di morsetto toccare tutte le parti metalliche o metallizzate.
A l'aide d'une pince vérifier toutes les parties métalliques ou métallisées.
Con la pinza, tocar todas las piezas metálicas o metalizadas.
Netzstecker/Mains plug/Spina di rete/Fiche secteur/Clavija de red

Fig. 1

Messen des Ableitstromes nach VDE 0701.
Ableitstrommesser (U_{Test} = 220 V≈) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem

$I_{Ableit} \leq 1$ mA bei $U_{Test} = 220$V ≈
Meßzeit ≥ 1 s

Measurement of the Leakage Current to VDE 0701.
Connect the Leakage Current Meter (U_{Test} = 220V≈) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, screws, etc.) made from metal or metal alloy. The product is fault free if $I_{Leak} \leq 1$mA at $U_{Test} = 220$V ≈
Measuring time: ≥ 1 s

Misura della corrente di dispersione secondo VDE 0701
Applic. il misuratore di isolamento ($tens._{prova}$ = 220 V≈) contemporaneamente ai due poli di rete e tra tutte le parti del mobile e delle funzioni (antenna, prese, tasti, mascherine, viti ecc.) in metallo o in lega matallica. L'apparecchio non presenta difetti quando:

$I_{disp.} \leq 1$ mA con $tens._{prova} = 220$ V≈
Tempo di misura : ≥ 1 s

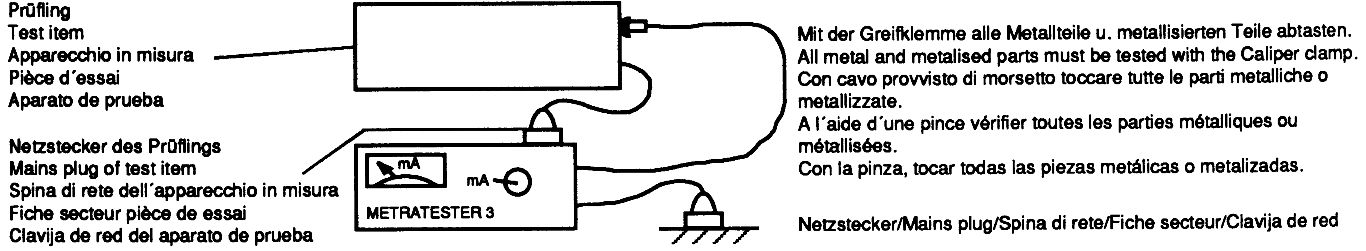
Prüfling
Test item
Apparecchio in misura
Pièce d'essai
Aparato de prueba
Netzstecker des Prüflings
Mains plug of test item
Spina di rete dell'apparecchio in misura
Fiche secteur pièce de essai
Clavija de red del aparato de prueba
mA
mA
METRATESTER 3
Mit der Greifklemme alle Metallteile u. metallisierten Teile abtasten.
All metal and metalised parts must be tested with the Caliper clamp.
Con cavo provvisto di morsetto toccare tutte le parti metalliche o metallizzate.
A l'aide d'une pince vérifier toutes les parties métalliques ou métallisées.
Con la pinza, tocar todas las piezas metálicas o metalizadas.
Netzstecker/Mains plug/Spina di rete/Fiche secteur/Clavija de red

Fig. 2

Wir empfehlen die Messungen mit dem **METRATESTER 3** durchzuführen. (Meßgerät zur Prüfung elektrischer Geräte nach VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Ist die Sicherheit des Gerätes nicht gegeben, weil
- eine Instandsetzung unmöglich ist
- oder der Wunsch des Benützers besteht, die Instandsetzung nicht durchführen zu lassen, so muß dem Betreiber die vom Gerät ausgehende Gefahr schriftlich mitgeteilt werden.

We recommend that the measurements are carried out using the **METRATESTER 3**. (Test equipment for checking electrical products to VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

If the safety of the product is not proved, because
- a repair and restoration is impossible
- or the request of the user is that the restoration is not to be carried out, the operator of the product must be warned of the danger by a written warning.

Si raccomanda di effettuare le misure con lo strumento **METRATESTER 3** (strumento di misura per il controllo di apparecchi elettrici secondo VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Se la sicurezza dell'apparecchio non è raggiunta, perchè
- una riparazione non è possibile
- oppure è desiderio del cliente che una riparaz. non avvenga in questi casi si deve comunicare per iscritto all'utilizzat. la pericolosità dell'apparecchio riguardo il suo isolamento.

Empfehlungen für den Servicefall
- Nur Original-Ersatzteile verwenden.
- Bei Bauteilen oder Baugruppen mit der Sicherheitskennzeichnung ⚠ sind Original-Ersatzteile zwingend notwendig.
- Auf Sollwert der Sicherungen achten.
- Zur Sicherheit beitragende Teile des Gerätes dürfen weder beschädigt noch offensichtlich ungeeignet sein.
- Dies gilt besonders für Isolierungen und Isolierteile.
- Netzleitungen und Anschlußleitungen sind auf äußere Mängel vor dem Anschluß zu prüfen. Isolation prüfen!
- Die Funktionssicherheit der Zugentlastung und von Biegeschutz-Tüllen ist zu prüfen.
- Thermisch belastete Lötstellen absaugen und neu löten.
- Belüftungen frei lassen.

Recommendation for service repairs
- Use only original spare parts.
  With components or assemblies accompanied with the Safety Symbol ⚠ only original-spare parts are strictly to be used.
- Use only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection
  bushes are to be checked:
- Thermally loaded solder pads are to suck off and re-soldered.
- Ensure that the ventilation slots are not obstructed.

Raccomandazione per il servizio assistenza
- Impiegare solo componenti originali:
  I componenti o i gruppi di componenti contraddistinti dall'indicaz. ⚠ devono assolutamente venir sostituiti con parti originale.
- Osservare il valore nominale dei fusibili.
- I componenti che concorrono alla sicurezza dell´apparecchio non possono essere nè danneggiati nè risultare visibilmente inadatti. Questo vale soprattutto per isolamenti e parti isolate.
- I cavi di rete e di collegamento vanno controllati prima dell'utilizzo affinchè non presentino imperfezioni esteriori. Controllare l'isolamento.
- E´necessario controllare la sicurezza dei fermacavi e delle guaine flessibili.
- Saldature caricate termicam. vanno rifatte.
- Lasciare libere le fessure di areazione.

F

Prescriptions de securite

Suite aux travaux de maintenance sur les appareils de la classe II, il convient de mesurer la résistance d'isolement et le courant de tuite sur l'appareil en état de marche, contormément á la norme **VDE 0701 §200**, ou selon les prescriptions en vigueur sur le lieu de tonctionnement de l'appareil!
Cet appareil est contorme aux prescriptions de sécurité classe II, signaléé par le symbole ▣ .

Mesure de la resistance d´isolement selon VDE 0701
Brancher un appareil de mesure d'isolaton (U_{test} = 500 V-) simultanément sur les deux pôles secteur et entre toutes les parties métalliques ou métallisées accessibles de l'appareil (antenne, embases, touches, enjoliveurs, vis, etc.).
Le tonctionnement est correct lorsque:

$R_{isol} \geq 2$ MΩ pour une U_{test} : 500V-
Durée de la mesure: ≥ 1s

Observations: L'isolation des appareils de la classe II, de part leur conception résistance de décharge), peut étre intérieur á 2 MΩ, (Fig. 1).

Mesure du courant de fuite selon VDE 0701
Brancher un ampèremètre du courant de fuite (U_{test} = 220V≈) simultanément sur les deux pôles du secteur et entre toutes les parties mètalliques ou mètallisèe accessibles de l'appareil (antenne, embases, touches, enjoliveurs, vis, etc.). Le tinctionnement est correct lorsque (Fig. 2): $I_{tuite} \leq 1$mA pour U_{test} : 200V≈
Durée de la mesure ≥ 1 s.

Pour ces mesures, nous préconisons l'utilisation du **METRATEST0R** 3 (instrument de mesure pour le contrôle d'appareils électriques conformes á la norme VDE 0701).

METRAWATT GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Dans le cas où la sécurité de l'appareil nèst pas assurée pour les aisons suivantes:
- la remise en état est impossible
- l'utilisateur ne souhaîte pas la remise en état de l'appareil. l'utilisateur doit être informé par écrit du danger que représente lùtilisation de l'appareil.

Recommandations pour la maintenance
- Utiliser exclusivement des piéces de rechange d'origine. Les composants et ensembles de composants signalés par le symbole ⚠ doivent être impérativement remplacés par des pièces d'origine.
- Respecter la valeur nominale des tusibles.
- Veiller au bon état et la conformité des pièces contribuant à la sécurité de tonctionnement de l'appareil. Ceci s'applique particuliérement aux isolements et pièces isolantes.
- Véritier le bon état extérieur des câbles secteur et des câbles de raccordement au point de vue isolement avant la mise sous tènsion.
- Véritier le bon état des protections de gaine.
- Nettoyer les soudures avant de les renouveler.
- Dégager les voies d'aération.

E

Disposiciones para la seguridad

Después de operaciones de servicio en aparatos de la clase de proteccion II, se llevará a cabo la medida de la resistencia de aislamiento y de la corriente derivada, con el aparato conectado, de acuerdo con **VDE 0701** o de las disposiciones vigentes en el lugar de instalación.
Este aparato corresponde a la clase de protección II, reconocible por el sìmbolo ▣ .

Medida de la **resistencia de aislamiento** según **VDE 0701.** Aplicar el medidor de aislamiento (U_{prueba} = 500 V-), simultáneamente, a los dos polos de red y entre todas las partes del mueble o de funciones (antena, conectores, teclas, tornillos, etc.) de matal o aleaciones metálicas. El aparato estará libre de defectos con:

$R_{aisl} \geq 2$ MΩ con U_{prueba} = 500 V-
Tiempo de medida ≥ 1 seg.

Observación: En aparatos de la clase de protecciòn II, condicionado por la construcción y por resistencias de descarga, el valor de medida de la resistencia de aislamiento puede ser superior a < 2 MΩ. En este caso es decisiva la medida de la corriente derivada (Fig.1).

Medida de la **corriente derivada** de acuerdo con **VDE 0701**. Aplicar el medidor de corriente derivada (U_{prueba} = 220 V≈) simultáneamente a los dos polos de red y entre todas las partes del mueble o de funciones (antena, conectores, teclas, tornillos, etc.) de matal o aleaciones metálicas. El aparato estará libre de defectos con (Fig.2):

$I_{deriv} \leq 1$ mA con U_{prueba} = 220 V≈.
Tiempo de medida : ≥ 1 seg.

Aconsejamos llevar a cabo las medidas con el **METRATESTER 3** . (Instrumento de medida para la comprobación de aparatos eléctricos según VDE 0701).

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Triebstr. 44
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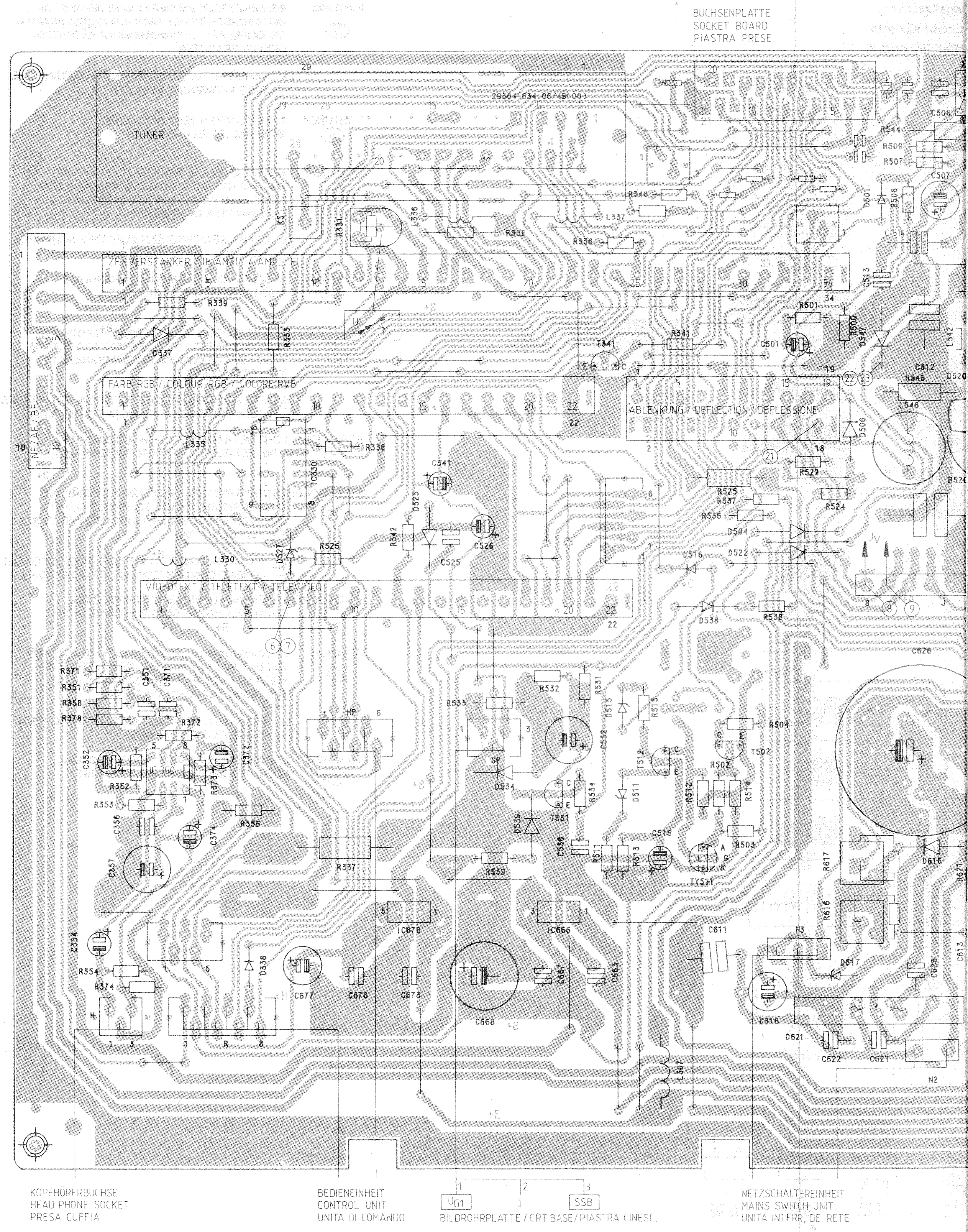
Si no se cumple la seguridad del aparato, poroue
- la puesta en orden es imposible, o
- esiste el desco del usuario de no realizarla, se ha de comunicar a quien lo haga funcionar, por escrito, del peligro dimanante del aparato.

Recomendaciones para caso de servicio
- Emplear sólo componentes originales.
  Con componentes o grupos constructivos con el indicativo de seguridad ⚠ son de obligada neccsidad piezas de repuesto originales.
- Las vartes del aparato que contribuyan a la seguridad del mismo no deben estar deterioradas ni ser manifiestamente inadecuadas.
  Esto es especialmente válido para aislamientos o piezas aislantes.
- Los cables de red y de conexión se comprobarán, antes de conectarlos, en cuanto a defectos externos. Comprobar el aislamiento.
- Se ha de comprobar la función de seguridad de la compensación de tiro o de los manguitos de protección contra doblamientos.
- Repasar los puntos de soldadura sometidos a carga térmica.
- Mantener libres los canales aireación.


BUCHSENPLATTE
SOCKET BOARD
PIASTRA PRESE
TUNER
29304-634.06/48(00)
ZF-VERSTARKER / IF AMPL / AMPL FI
FARB RGB / COLOUR RGB / COLORE RVB
ABLENKUNG / DEFLECTION / DEFLESSIONE
VIDEOTEXT / TELETEXT / TELEVIDEO
NF/AF/BF
K5
R331
L336
R332
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D337
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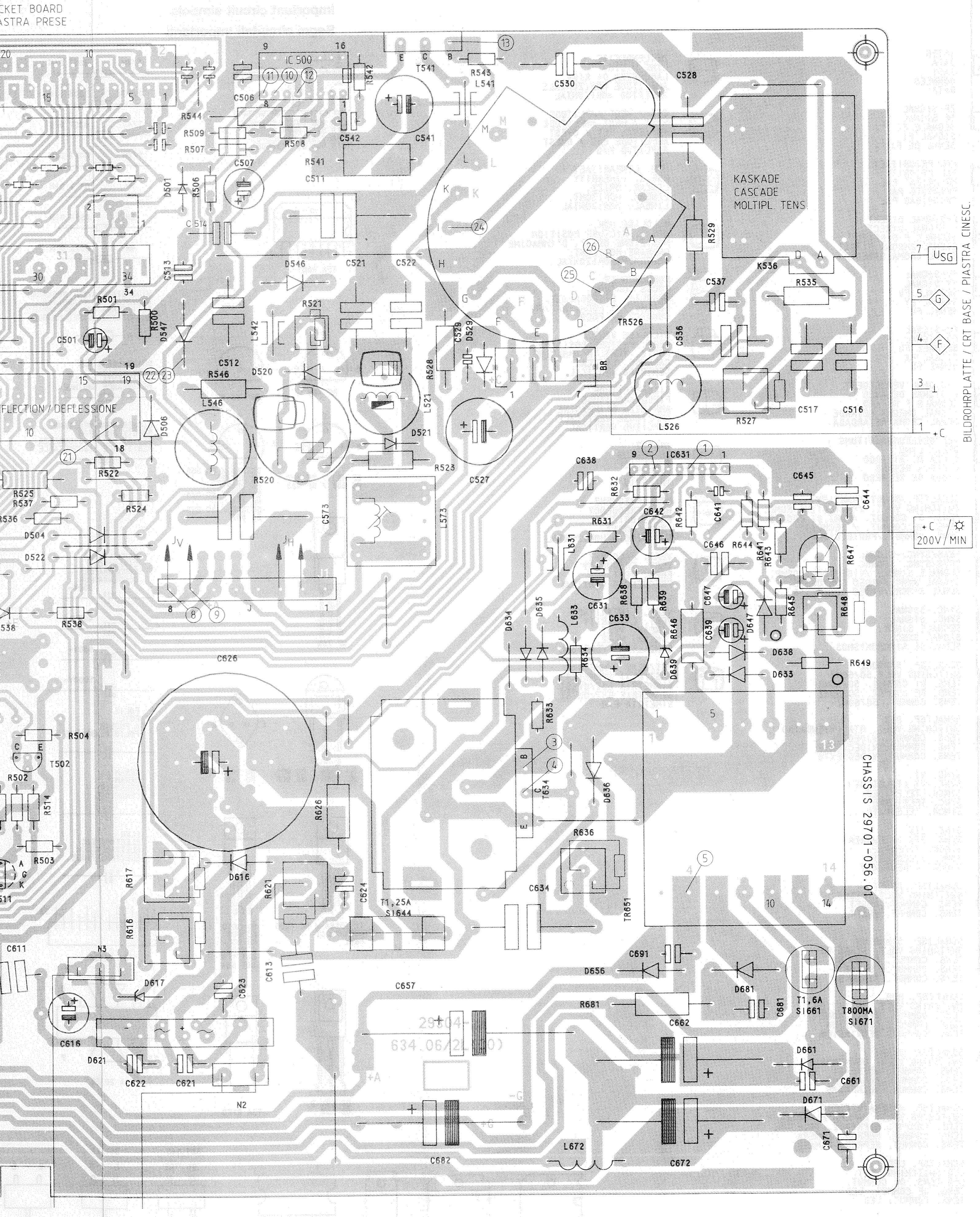
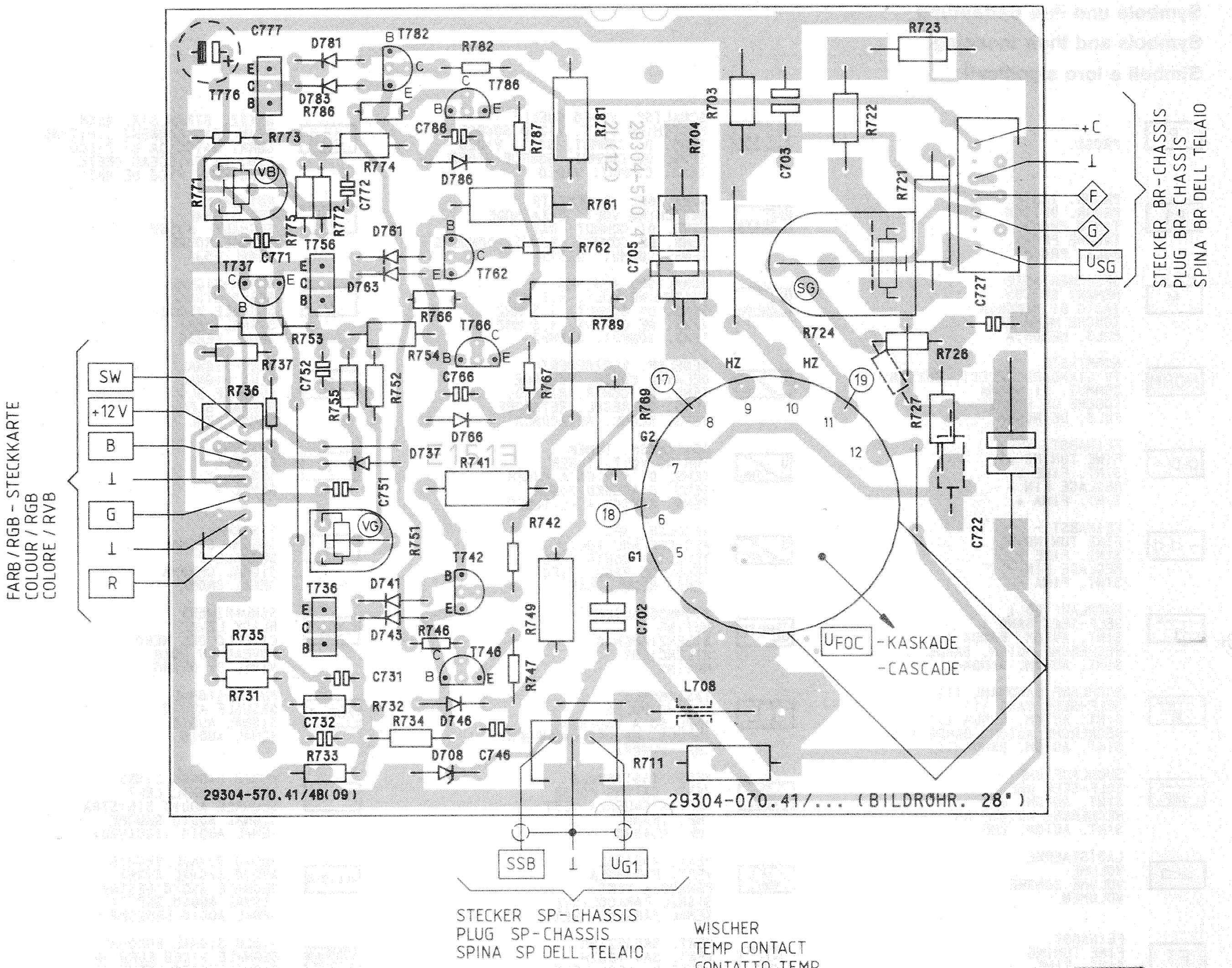
C626
KOPFHORERBUCHSE
HEAD PHONE SOCKET
PRESA CUFFIA
BEDIENEINHEIT
CONTROL UNIT
UNITA DI COMANDO
UG1
SSB
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.
NETZSCHALTEREINHEIT
MAINS SWITCH UNIT
UNITA INTERR. DE RETE


…CHSENPLATTE
…CKET BOARD
…ASTRA PRESE
IC 500
KASKADE
CASCADE
MOLTIPL. TENS.
…FLECTION / DEFLESSIONE
IC631
CHASSIS 29701-056.01
T1,25A
S1644
T1,6A
S1661
T800MA
S1671
29304-634.06/2…
USG
G
F
⊥
+C
BILDROHRPLATTE / CRT BASE / PIASTRA CINESC.
+C / ☼
200V / MIN

NETZSCHALTEREINHEIT
MAINS SWITCH UNIT
UNITA INTERR. DE RETE

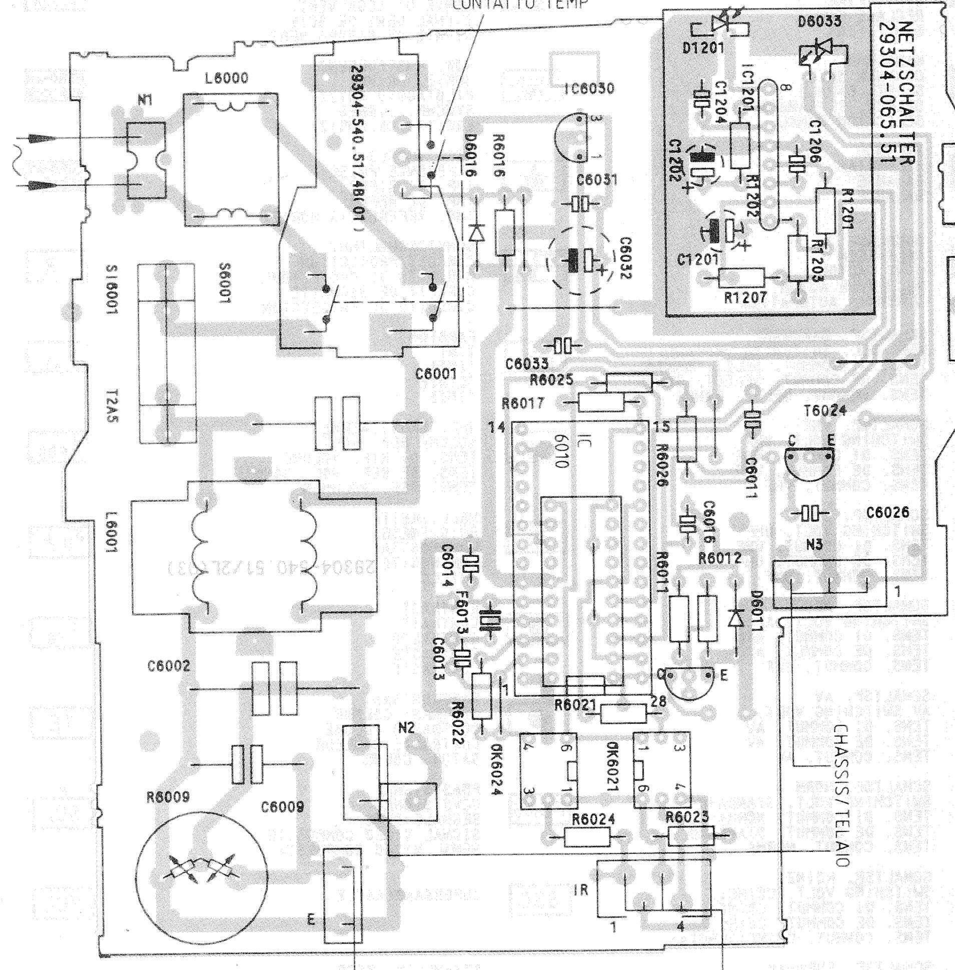

SW
+12V
B
⊥
G
⊥
R
29304-570.41/48(09)
29304-070.41/... (BILDROHR. 28")
UFOC -KASKADE
-CASCADE
HZ
G2
G1
SSB
⊥
UG1
+C
⊥
F
G
USG

FARB/RGB - STECKKARTE
COLOUR / RGB
COLORE / RVB

STECKER BR-CHASSIS
PLUG BR-CHASSIS
SPINA BR DELL TELAIO

STECKER SP-CHASSIS
PLUG SP-CHASSIS
SPINA SP DELL TELAIO

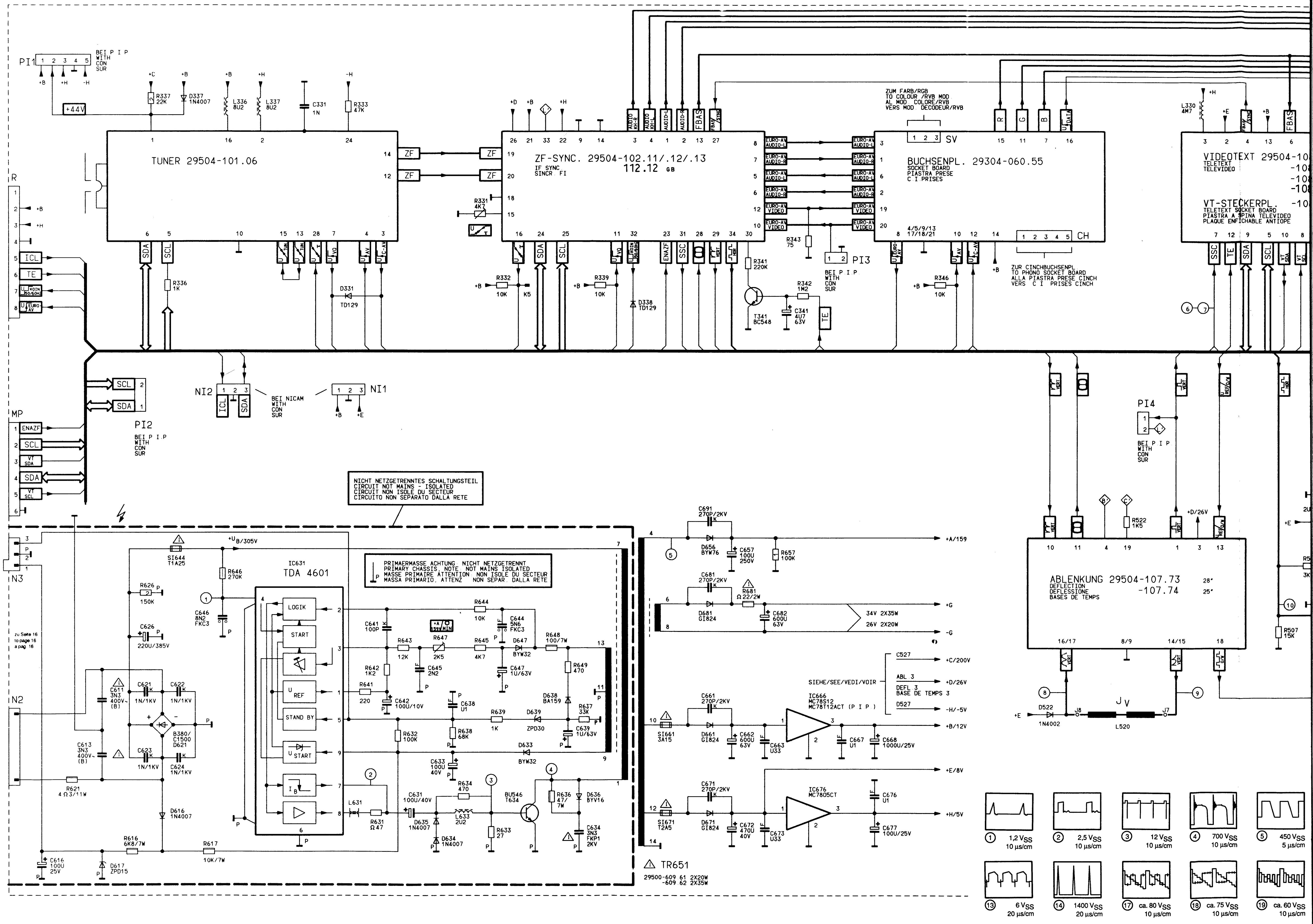
WISCHER
TEMP CONTACT
CONTATTO TEMP


NETZSCHALTER
29304-065.51
29304-540.51/48(01)
N1
L6000
S6001
SI6001
T2A5
L6001
IC6030
IC6010
T6024
N2
N3
R6009
IR
E

CHASSIS/TELAIO

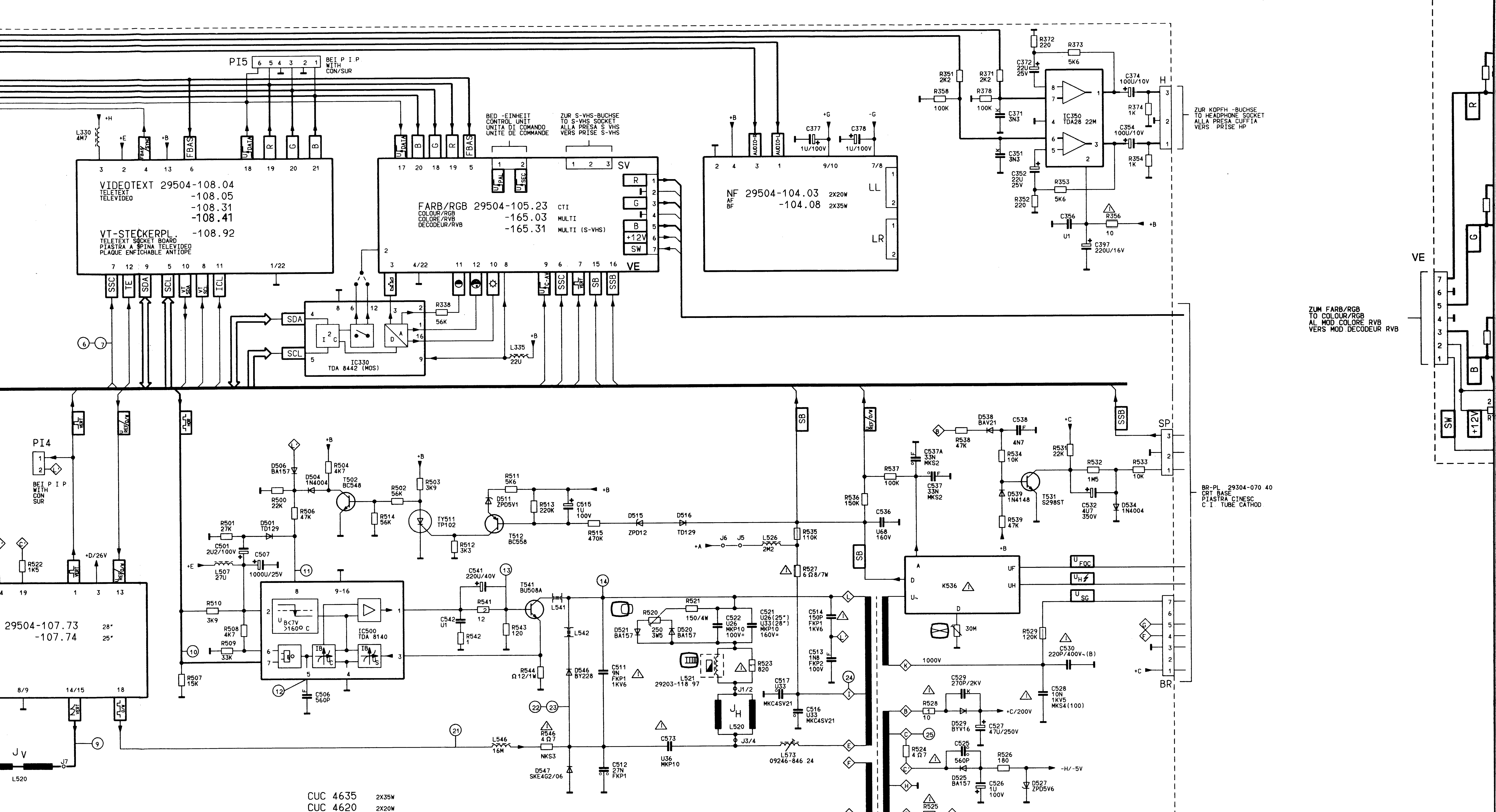
ENTMAGNETISIERUNG
DEGAUSING
SMAGNETIZZAZIONE

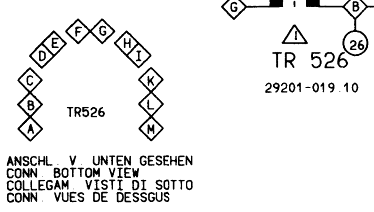
BEDIENEINHEIT
CONTROL UNIT
UNITA DI COMANDO


PI1 1 2 3 4 5
BEI P I P
WITH
CON
SUR
+44V
R337 22K
D337 1N4007
L336 8U2
L337 8U2
C331 1N
R333 47K
TUNER 29504-101.06
ZF
SDA
SCL
R336 1K
D331 TD129
R
ICL
TE
U KOIN 50/60HZ
U EURO-AV
+B
+H
ZF-SYNC. 29504-102.11/.12/.13
112.12 GB
IF SYNC
SINCR FI
R331 4K7
R332 10K
K5
R339 10K
D338 TD129
ENAZF
SSC
VERT
HOR
AUDIO KH-R
AUDIO KH-L
AUDIO-L
AUDIO-R
FBAS
FBAS SYNC
EURO-AV AUDIO-L
EURO-AV AUDIO-R
EURO-AV VIDEO
R343 75
R341 220K
T341 BC548
R342 1M2
C341 4U7 63V
PI3
BEI P I P
WITH
CON
SUR
ZUM FARB/RGB
TO COLOUR /RVB MOD
AL MOD COLORE/RVB
VERS MOD DECODEUR/RVB
SV
BUCHSENPL. 29304-060.55
SOCKET BOARD
PIASTRA PRESE
C I PRISES
4/5/9/13
17/18/21
CH
ZUR CINCHBUCHSENPL.
TO PHONO SOCKET BOARD
ALLA PIASTRA PRESE CINCH
VERS C I PRISES CINCH
R346 10K
R
G
B
U DATA
L330 4M7
VIDEOTEXT 29504-10
TELETEXT
TELEVIDEO
VT-STECKERPL.
TELETEXT SOCKET BOARD
PIASTRA A SPINA TELEVIDEO
PLAQUE ENFICHABLE ANTIOPE
NI2
NI1
BEI NICAM
WITH
CON
SUR
MP
PI2
BEI P I P
WITH
CON
SUR
VT SDA
VT SCL
PI4
BEI P I P
WITH
CON
SUR
R522 1K5
+D/26V
ABLENKUNG 29504-107.73 28"
-107.74 25"
DEFLECTION
DEFLESSIONE
BASES DE TEMPS
R507 15K
D522 1N4002
J8
J7
L520
J V
N3
N2
zu Seite 16
to page 16
a pag. 16
SI644 T1A25
+U B/305V
R626 150K
C626 220U/385V
R646 270K
C646 8N2 FKC3
IC631
TDA 4601
LOGIK
START
U REF
STAND BY
U START
I B
C641 100P
R643 12K
R647 2K5
R644 10K
C644 5N6 FKC3
R645 4K7
D647 BYW32
R648 100/7W
R649 470
R642 1K2
C645 2N2
C647 1U/63V
R641 220
C642 100U/10V
C638 U1
D638 BA159
R637 33K
R639 1K
D639 ZPD30
C639 1U/63V
R632 100K
R638 68K
D633 BYW32
C633 100U 40V
R634 470
L633 2U2
BU546 T634
R636 47/7W
D636 BYV16
C634 3N3 FKP1 2KV
L631
R631 Ω47
C631 100U/40V
D635 1N4007
D634 1N4007
R633 27
C611 3N3 400V~ (B)
C613 3N3 400V~ (B)
C621 1N/1KV
C622 1N/1KV
C623 1N/1KV
C624 1N/1KV
B380/C1500 D621
R621 4Ω3/11W
D616 1N4007
R616 6K8/7W
R617 10K/7W
C616 100U 25V
D617 ZPD15
C691 270P/2KV
D656 BYW76
C657 100U 250V
R657 100K
+A/159
C681 270P/2KV
R681 Ω22/2W
D681 GI824
C682 600U 63V
34V 2X35W
26V 2X20W
+G
-G
C527
+C/200V
ABL 3
+D/26V
DEFL 3
BASE DE TEMPS 3
D527
-H/-5V
SIEHE/SEE/VEDI/VOIR
IC666
MC78S12
MC78T12ACT (P I P)
C661 270P/2KV
SI661 3A15
D661 GI824
C662 600U 63V
C663 U33
C667 U1
C668 1000U/25V
+B/12V
+E/8V
C671 270P/2KV
IC676 MC7805CT
C676 U1
SI671 T2A5
D671 GI824
C672 470U 40V
C673 U33
C677 1000U/25V
+H/5V
TR651
29500-609 61 2X20W
-609 62 2X35W
① 1,2 VSS 10 µs/cm
② 2,5 VSS 10 µs/cm
③ 12 VSS 10 µs/cm
④ 700 VSS 10 µs/cm
⑤ 450 VSS 5 µs/cm
⑬ 6 VSS 20 µs/cm
⑭ 1400 VSS 20 µs/cm
⑰ ca. 80 VSS 10 µs/cm
⑱ ca. 75 VSS 10 µs/cm
⑲ ca. 60 VSS 10 µs/cm

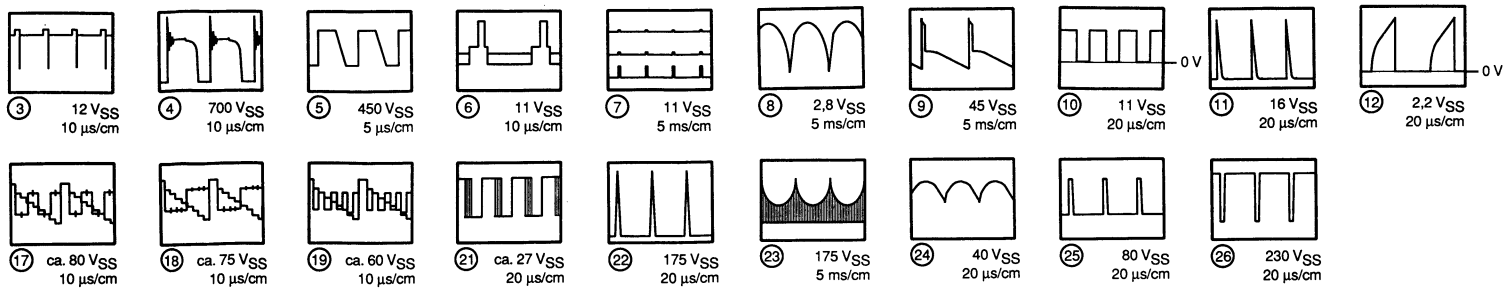
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE

PRIMAERMASSE ACHTUNG NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION NON ISOLE DU SECTEUR
MASSA PRIMARIO. ATTENZ NON SEPAR. DALLA RETE

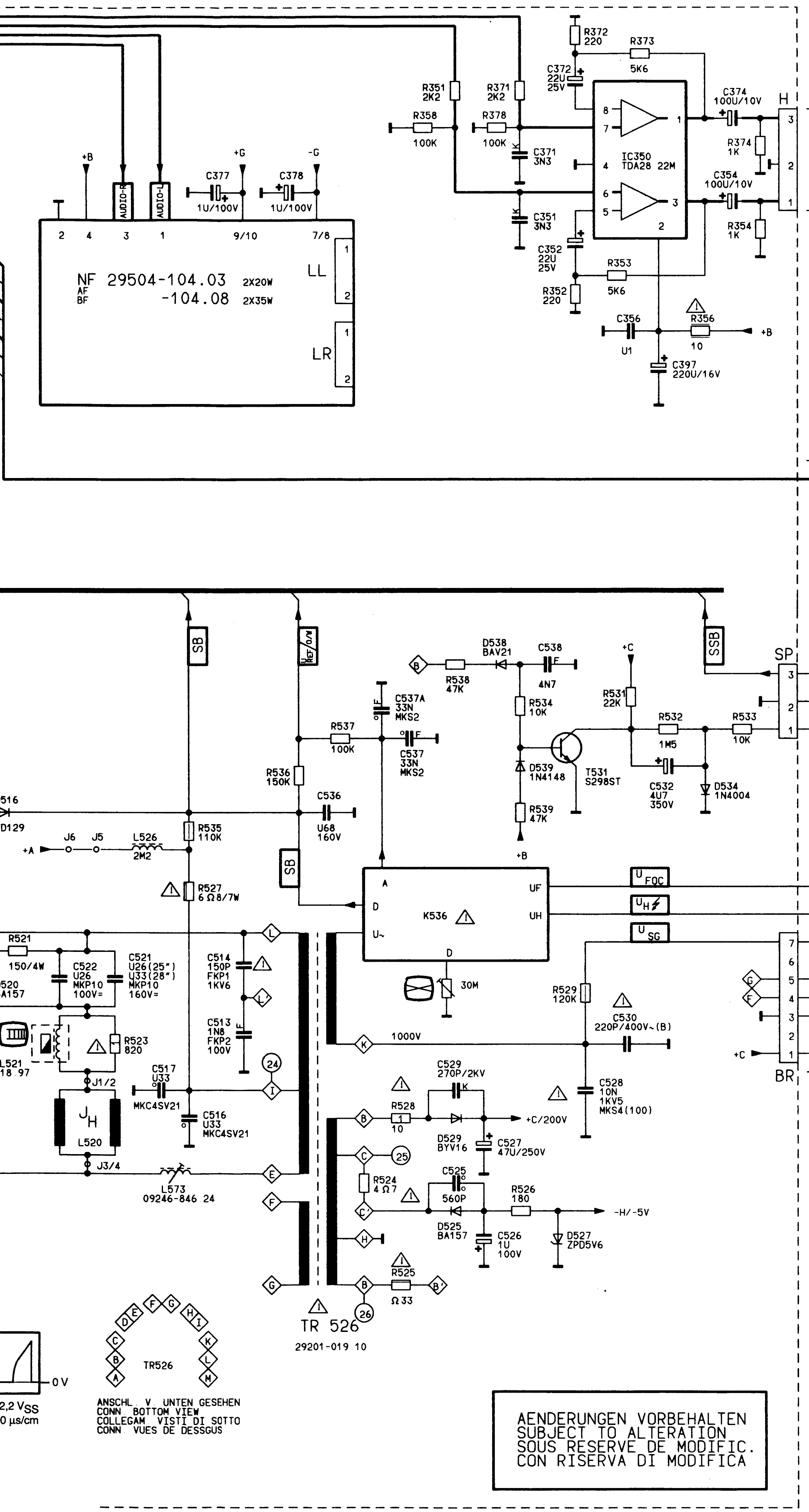

PI5
BEI P I P WITH CON/SUR
VIDEOTEXT 29504-108.04
TELETEXT
TELEVIDEO
-108.05
-108.31
-108.41
VT-STECKERPL. -108.92
TELETEXT SOCKET BOARD
PIASTRA A SPINA TELEVIDEO
PLAQUE ENFICHABLE ANTIOPE
BED.-EINHEIT
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
ZUR S-VHS-BUCHSE
TO S-VHS SOCKET
ALLA PRESA S VHS
VERS PRISE S-VHS
FARB/RGB 29504-105.23 CTI
COLOUR/RGB -165.03 MULTI
COLORE/RVB -165.31 MULTI (S-VHS)
DECODEUR/RVB
SV
VE
NF 29504-104.03 2X20W
AF -104.08 2X35W
BF
LL
LR
IC350 TDA28 22M
ZUR KOPFH.-BUCHSE
TO HEADPHONE SOCKET
ALLA PRESA CUFFIA
VERS PRISE HP
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD.COLORE RVB
VERS MOD.DECODEUR RVB
IC330 TDA 8442 (MOS)
SDA
SCL
PI4
BEI P I P WITH CON SUR
29504-107.73 28"
-107.74 25"
IC500 TDA 8140
T541 BU508A
L521 29203-118 97
K536
BR-PL 29304-070 40
CRT BASE
PIASTRA CINESC
C I TUBE CATHOD
SP
BR
TR 526
29201-019 10
L573 09246-846 24
L520
CUC 4635 2X35W
CUC 4620 2X20W



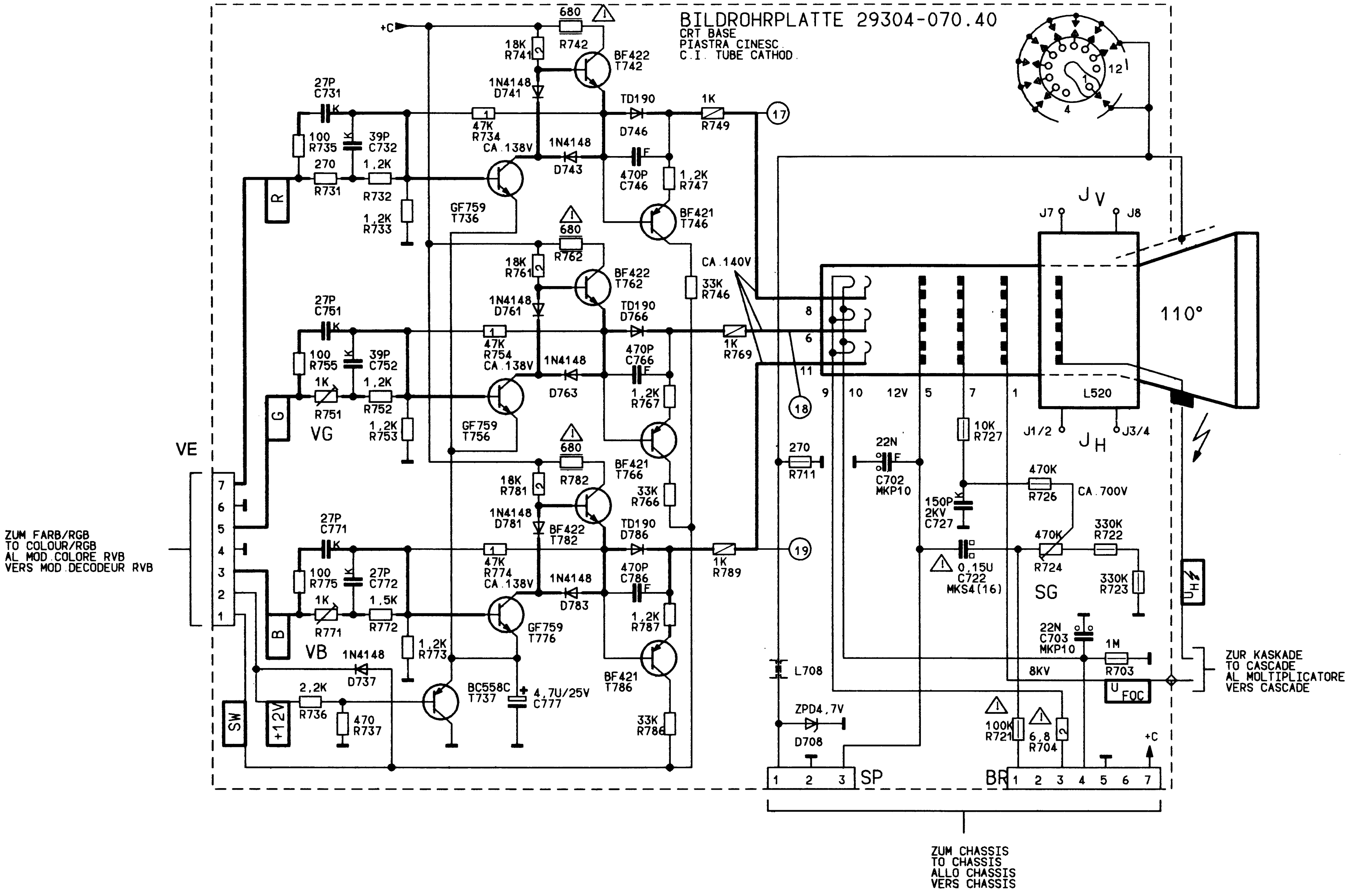
ANSCHL. V. UNTEN GESEHEN
CONN. BOTTOM VIEW
COLLEGAM. VISTI DI SOTTO
CONN. VUES DE DESSOUS



AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
SOUS RESERVE DE MODIFIC.
CON RISERVA DI MODIFICA


NF 29504-104.03 2X20W
AF
BF
-104.08 2X35W
LL
LR
AUDIO-R
AUDIO-L
+B
+G
-G
C377 1U/100V
C378 1U/100V
R351 2K2
R371 2K2
R358 100K
R378 100K
C371 3N3
C351 3N3
C372 22U 25V
R372 220
R373 5K6
IC350 TDA28 22M
C374 100U/10V
C354 100U/10V
R374 1K
R354 1K
C352 22U 25V
R353 5K6
R352 220
C356 U1
R356 10
C397 220U/16V
H
ZUR KOPFH.-BUCHSE
TO HEADPHONE SOCKET
ALLA PRESA CUFFIA
VERS. PRISE HP
SB
SSB
SP
BR-PL. 29304-070 40
CRT BASE
PIASTRA CINESC.
C.I. TUBE CATHOD
D538 BAV21
C538 4N7
R538 47K
C537A 33N MKS2
C537 33N MKS2
R537 100K
R534 10K
R531 22K
R532 1M5
R533 10K
T531 S298ST
D539 1N4148
R539 47K
C532 4U7 350V
D534 1N4004
R536 150K
C536 U68 160V
R535 110K
D129
J6
J5
L526 2M2
R527 6Ω8/7W
K536
UF
UH
U FOC
U H
U SG
30M
1000V
R521 150/4W
C522 U26 MKP10 100V=
C521 U26(25") U33(28") MKP10 160V=
C514 150P FKP1 1KV6
C513 1N8 FKP2 100V
R523 820
L521
C517 U33 MKC4SV21
C516 U33 MKC4SV21
J1/2
J H
L520
J3/4
L573 09246-846 24
R529 120K
C530 220P/400V~(B)
C529 270P/2KV
R528 1
D529 BYV16
C527 47U/250V
+C/200V
C528 10N 1KV5 MKS4(100)
R524 4Ω7
C525 560P
R526 180
D525 BA157
C526 1U 100V
D527 ZPD5V6
-H/-5V
R525 Ω33
TR 526
29201-019 10
TR526
ANSCHL. V. UNTEN GESEHEN
CONN. BOTTOM VIEW
COLLEGAM. VISTI DI SOTTO
CONN. VUES DE DESSGUS
0V
2,2 VSS
0 µs/cm

AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
SOUS RESERVE DE MODIFIC.
CON RISERVA DI MODIFICA


BILDROHRPLATTE 29304-070.40
CRT BASE
PIASTRA CINESC.
C.I. TUBE CATHOD.
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD.COLORE RVB
VERS MOD.DECODEUR RVB
VE
R
G
B
SW
+12V
VG
VB
SG
27P C731
100 R735
39P C732
270 R731
1,2K R732
1,2K R733
47K R734 CA.138V
1N4148 D741
1N4148 D743
18K R741
680 R742
BF422 T742
GF759 T736
TD190 D746
1K R749
470P C746
1,2K R747
BF421 T746
CA.140V
33K R746
1K R769
1K R789
GF759 T756
GF759 T776
BF422 T762
BF421 T766
BF422 T782
BF421 T786
BC558C T737
4,7U/25V C777
2,2K R736
470 R737
1N4148 D737
270 R711
L708
ZPD4,7V D708
22N C702 MKP10
150P 2KV C727
10K R727
470K R726
CA.700V
470K R724
330K R722
330K R723
0,15U C722 MKS4(16)
22N C703 MKP10
1M R703
8KV
U FOC
100K R721
6,8 R704
J7
J8
J V
J H
J1/2
J3/4
L520
110°
ZUR KASKADE
TO CASCADE
AL MOLTIPLICATORE
VERS CASCADE
SP
BR
ZUM CHASSIS
TO CHASSIS
ALLO CHASSIS
VERS CHASSIS
17
18
19
+C

D

ABGLEICH DER BRÜCKENSPULE L 573

Bildbreite auf Minimum, den Tastkopf eines Zweistrahloszilloscopes an den Kollektor des Tranistors T541 (BU 508 A) einhängen.
Den anderen Tastkopf zwischen den Dioden D 546 und D 547 anschließen.
Mit der Spule L 573 beide Oszillogramme auf gleiche Impulsbreite abgleichen.

GB

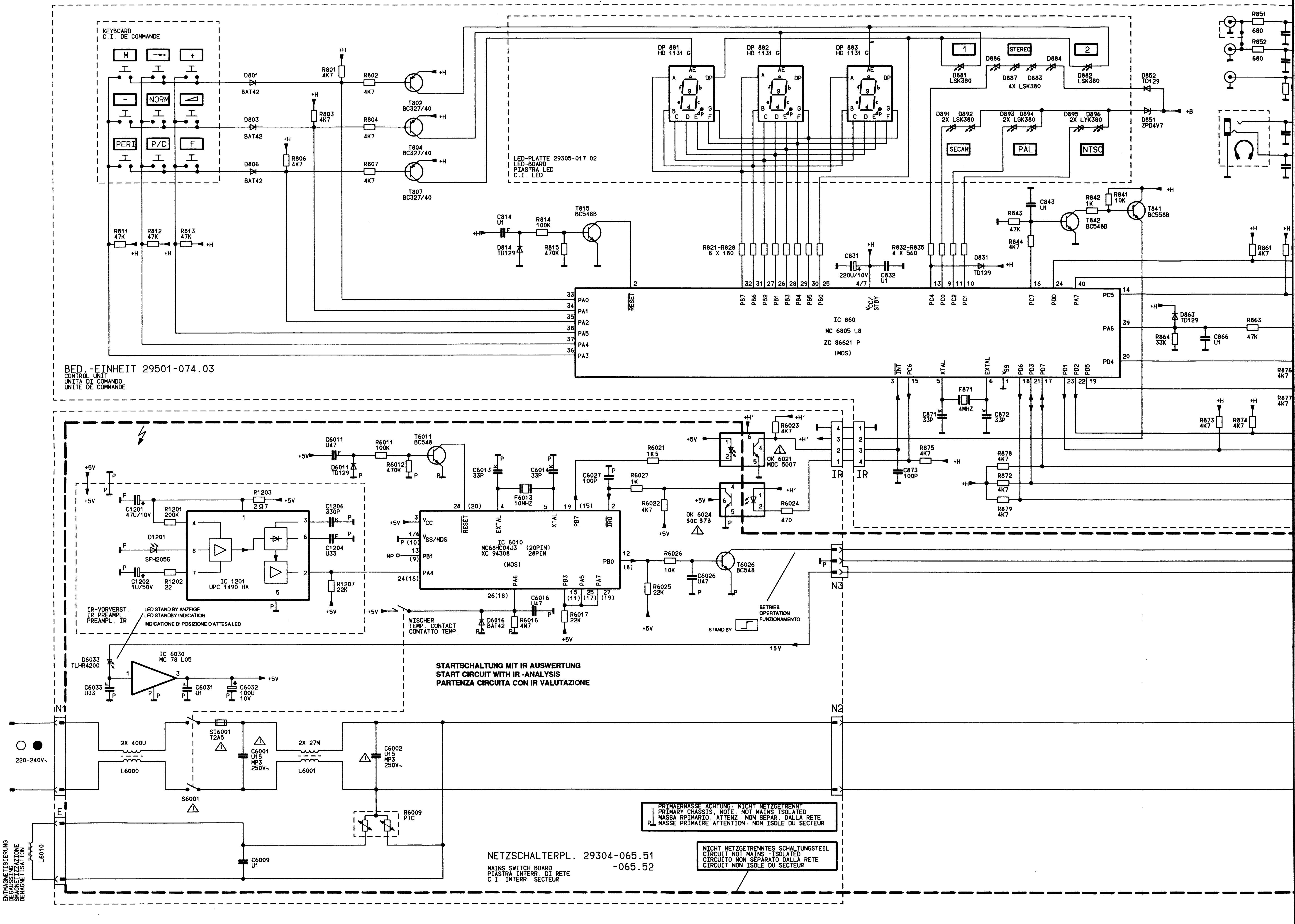
ADJUSTMENT OF THE BRIDGE COIL L 573

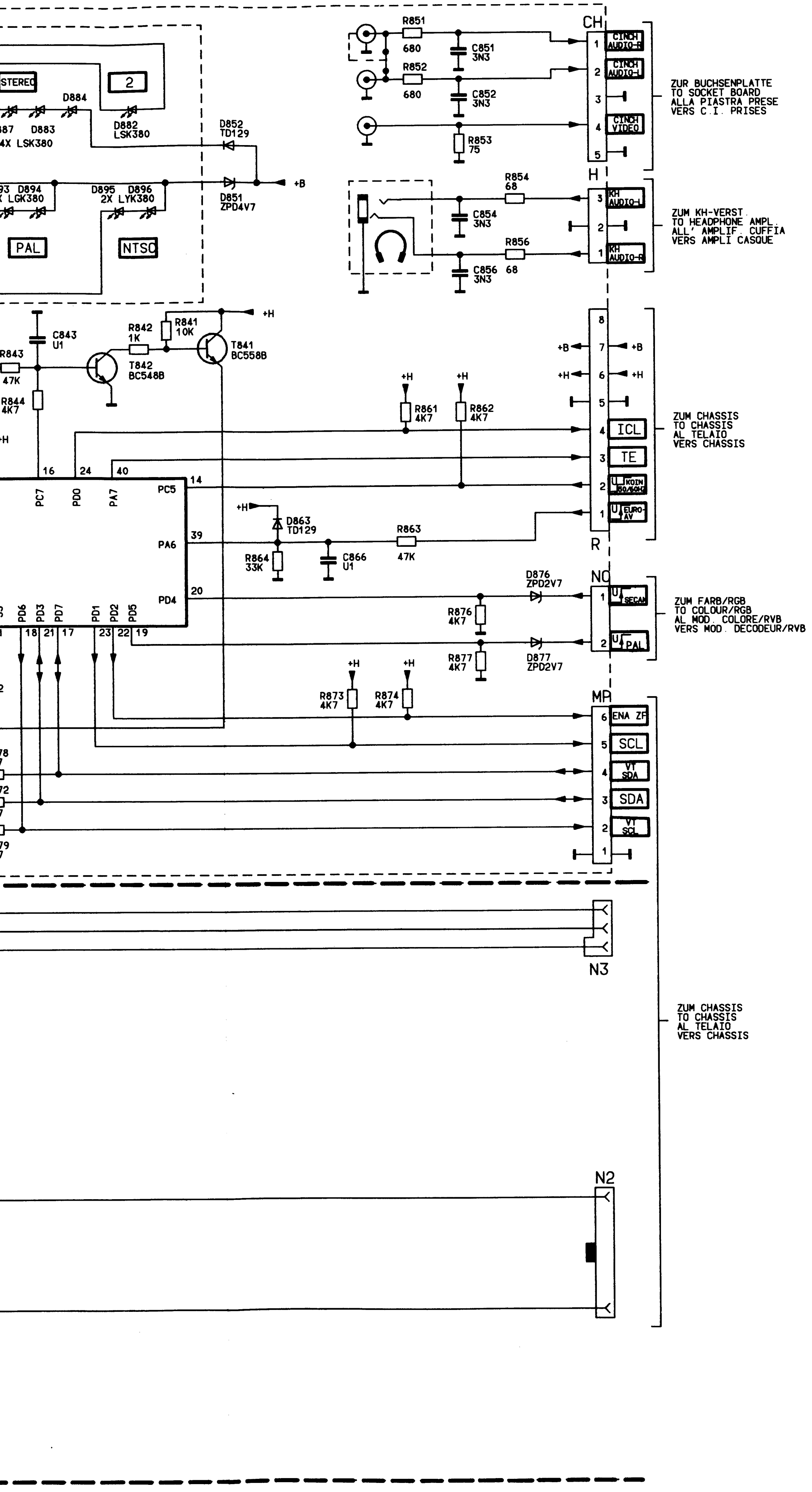
Picture width to minimum, then connect one test probe of a twin beam oscilloscope to the collector of transistor T 504 (BU 508 A).
Connect the other test probe to the junction of D 546, D 547.
Adjust the coil L 573 so that both oscillograms have the same pulse width.

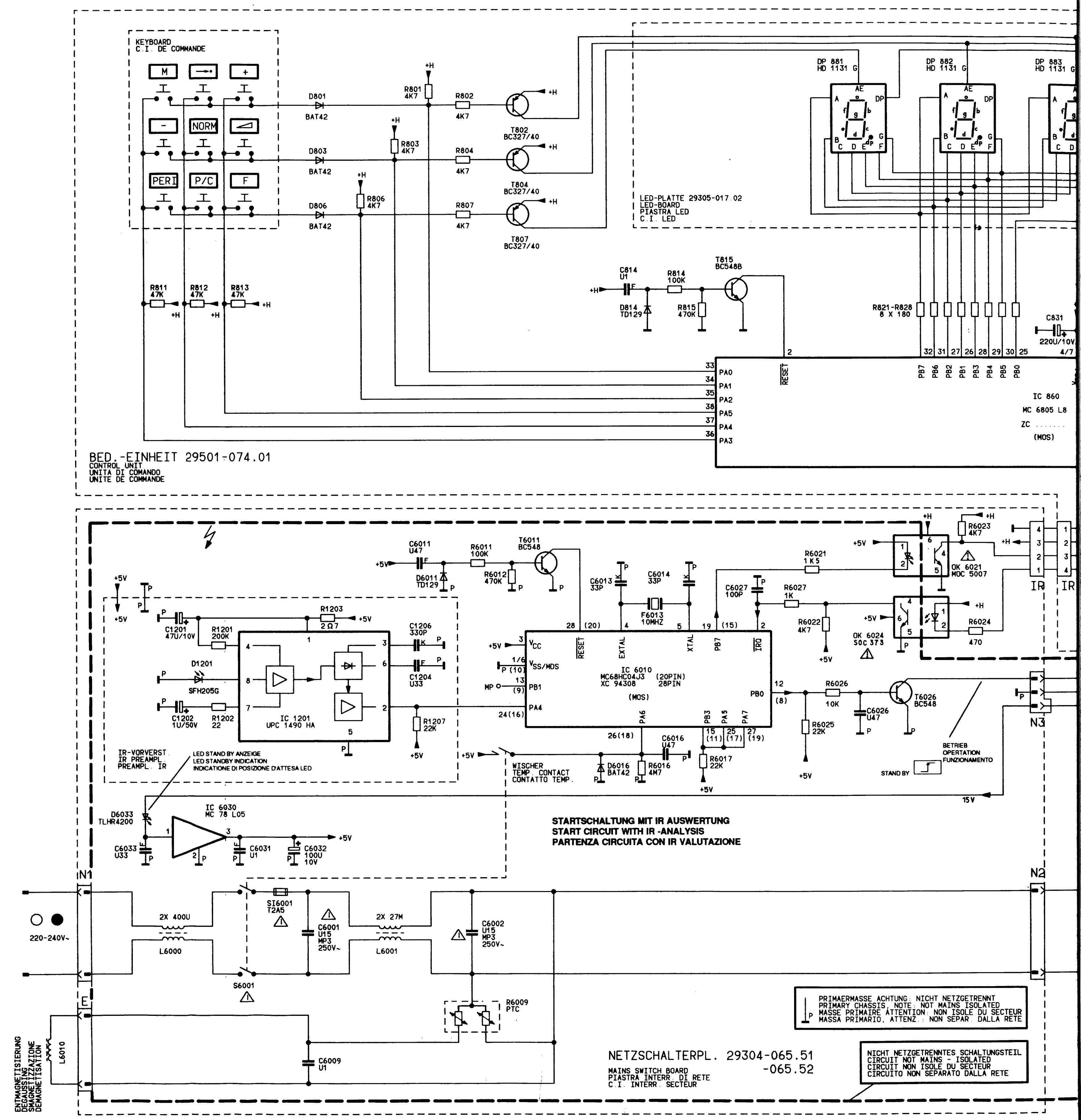
I

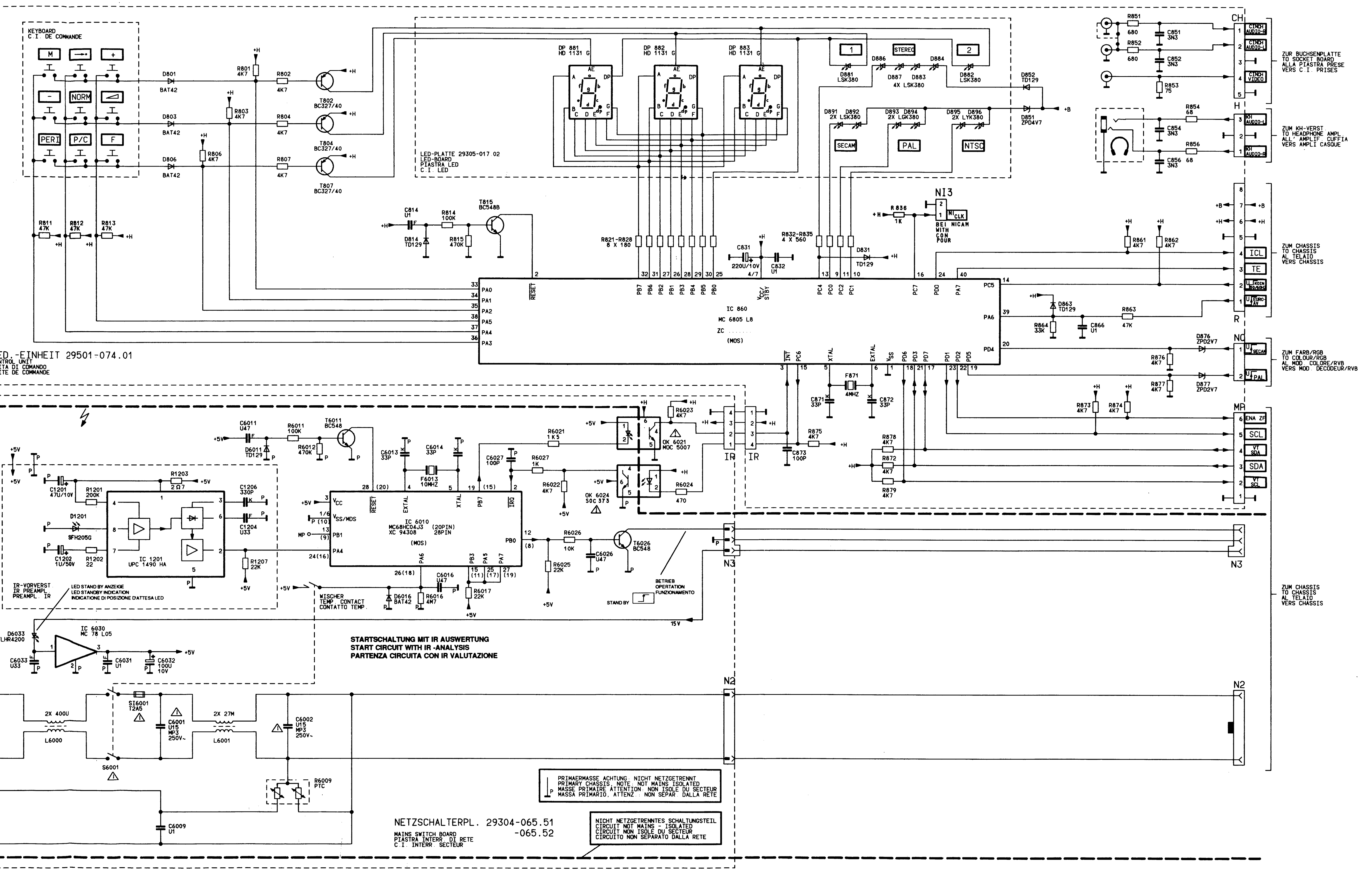
TARATURA DELLA BOBINA A PONTE L 573

Portare la largezza dell'immagine sul minimo è impiegare un oscilloscopio a doppia traccia collegando una sonda al collettore del transistor T 541 (BU 508 A) e a'altra tra i diodi D 546 e D 547.
Con la bobina L 573 tarare i due oscillogrammi per la stessa larghezza dell'impulso.


KEYBOARD
C.I. DE COMMANDE
M
+
-
NORM
PERI
P/C
F
D801 BAT42
D803 BAT42
D806 BAT42
R801 4K7
R803 4K7
R806 4K7
R802 4K7
R804 4K7
R807 4K7
T802 BC327/40
T804 BC327/40
T807 BC327/40
R811 47K
R812 47K
R813 47K
LED-PLATTE 29305-017.02
LED-BOARD
PIASTRA LED
C.I. LED
DP 881 HD 1131 G
DP 882 HD 1131 G
DP 883 HD 1131 G
1
STEREO
2
D881 LSK380
D886
D887 D883 4X LSK380
D884
D882 LSK380
D852 TD129
D851 ZPD4V7
D891 D892 2X LSK380
D893 D894 2X LGK380
D895 D896 2X LYK380
SECAM
PAL
NTSC
C814 U1
R814 100K
T815 BC548B
D814 TD129
R815 470K
R821-R828 8 X 180
C831 220U/10V
C832 U1
R832-R835 4 X 560
D831 TD129
C843 U1
R843 47K
R844 4K7
R842 1K
R841 10K
T842 BC548B
T841 BC558B
R851 680
R852 680
R861 4K7
D863 TD129
R864 33K
C866 U1
R863 47K
R876 4K7
R877 4K7
R873 4K7
R874 4K7
IC 860
MC 6805 L8
ZC 86621 P
(MOS)
RESET
VCC/STBY
F871 4MHZ
C871 33P
C872 33P
C873 100P
R875 4K7
R878 4K7
R872 4K7
R879 4K7
BED.-EINHEIT 29501-074.03
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
C6011 U47
D6011 TD129
R6011 100K
R6012 470K
T6011 BC548
C6013 33P
C6014 33P
F6013 10MHZ
C6027 100P
R6021 1K5
R6027 1K
R6022 4K7
R6023 4K7
OK 6021 MOC 5007
OK 6024 SOC 373
R6024 470
IC 6010
MC68HC04J3 (20PIN)
XC 94308 28PIN
(MOS)
R6026 10K
C6026 U47
T6026 BC548
R6025 22K
C6016 U47
D6016 BAT42
R6016 4M7
R6017 22K
C1201 47U/10V
R1201 200K
R1203 2Ω7
C1206 330P
C1204 U33
D1201 SFH205G
C1202 1U/50V
R1202 22
IC 1201 UPC 1490 HA
R1207 22K
IR-VORVERST.
IR PREAMPL.
PREAMPL. IR
LED STAND BY ANZEIGE
LED STANDBY INDICATION
INDICATIONE DI POSIZIONE D'ATTESA LED
WISCHER
TEMP. CONTACT
CONTATTO TEMP.
D6033 TLHR4200
IC 6030 MC 78 L05
C6033 U33
C6031 U1
C6032 100U 10V
BETRIEB
OPERTATION
FUNZIONAMENTO
STAND BY
15V
IR
N1
N2
N3
STARTSCHALTUNG MIT IR AUSWERTUNG
START CIRCUIT WITH IR -ANALYSIS
PARTENZA CIRCUITA CON IR VALUTAZIONE
220-240V~
2X 400U
L6000
SI6001 T2A5
S6001
C6001 U15 MP3 250V~
2X 27M
L6001
C6002 U15 MP3 250V~
R6009 PTC
C6009 U1
L6010
ENTMAGNETISIERUNG
DEGAUSSING
SMAGNETIZZAZIONE
DEMAGNETISATION
NETZSCHALTERPL. 29304-065.51
-065.52
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE
C.I. INTERR. SECTEUR
PRIMAERMASSE ACHTUNG: NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE: NOT MAINS ISOLATED
MASSA PRIMARIO, ATTENZ: NON SEPAR. DALLA RETE
MASSE PRIMAIRE ATTENTION: NON ISOLE DU SECTEUR
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS -ISOLATED
CIRCUITO NON SEPARATO DALLA RETE
CIRCUIT NON ISOLE DU SECTEUR


CH
H
R
NC
MP
N3
N2
CINCH AUDIO-R
CINCH AUDIO-L
CINCH VIDEO
KH AUDIO-L
KH AUDIO-R
ZUR BUCHSENPLATTE
TO SOCKET BOARD
ALLA PIASTRA PRESE
VERS C.I. PRISES
ZUM KH-VERST.
TO HEADPHONE AMPL.
ALL' AMPLIF. CUFFIA
VERS AMPLI CASQUE
ZUM CHASSIS
TO CHASSIS
AL TELAIO
VERS CHASSIS
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD. COLORE/RVB
VERS MOD. DECODEUR/RVB
ICL
TE
U KOIN 50/60Hz
U EURO-AV
U SECAM
U PAL
ENA ZF
SCL
VT SDA
SDA
VT SCL
STEREO
2
PAL
NTSC
D884
D882 LSK380
D883
4X LSK380
D894 LGK380
D895 D896 2X LYK380
D852 TD129
D851 ZPD4V7
+B
R851 680
R852 680
C851 3N3
C852 3N3
R853 75
R854 68
R856 68
C854 3N3
C856 3N3
C843 U1
R842 1K
R841 10K
T841 BC558B
T842 BC548B
R843 47K
R844 4K7
+H
R861 4K7
R862 4K7
PC7 PD0 PA7 PC5
PA6 PD4
PD6 PD3 PD7 PD1 PD2 PD5
16 24 40 14 39 20
18 21 17 23 22 19
D863 TD129
R864 33K
C866 U1
R863 47K
D876 ZPD2V7
D877 ZPD2V7
R876 4K7
R877 4K7
R873 4K7
R874 4K7


KEYBOARD
C.I. DE COMMANDE
M
+
-
NORM
PERI
P/C
F
D801 BAT42
D803 BAT42
D806 BAT42
R801 4K7
R802 4K7
R803 4K7
R804 4K7
R806 4K7
R807 4K7
T802 BC327/40
T804 BC327/40
T807 BC327/40
R811 47K
R812 47K
R813 47K
C814 U1
R814 100K
D814 TD129
R815 470K
T815 BC548B
LED-PLATTE 29305-017 02
LED-BOARD
PIASTRA LED
C.I. LED
DP 881 HD 1131 G
DP 882 HD 1131 G
DP 883 HD 1131 G
R821-R828 8 X 180
C831 220U/10V
IC 860
MC 6805 L8
ZC
(MOS)
RESET
PA0 PA1 PA2 PA5 PA4 PA3
PB7 PB6 PB2 PB1 PB3 PB4 PB5 PB0
BED.-EINHEIT 29501-074.01
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
C6011 U47
D6011 TD129
R6011 100K
R6012 470K
T6011 BC548
C6013 33P
C6014 33P
F6013 10MHZ
C6027 100P
R6021 1K5
R6027 1K
R6022 4K7
R6023 4K7
R6024 470
OK 6021 MOC 5007
OK 6024 SOC 373
IR
IC 6010
MC68HC04J3 (20PIN)
XC 94308 28PIN
(MOS)
VCC
VSS/MOS
PB1
PA4
PB0
EXTAL
XTAL
IRQ
PB3 PA5 PA7 PA6 PB7
R6026 10K
R6025 22K
C6026 U47
T6026 BC548
N3
BETRIEB
OPERATION
FUNZIONAMENTO
STAND BY
15V
C6016 U47
D6016 BAT42
R6016 4M7
R6017 22K
WISCHER
TEMP. CONTACT
CONTATTO TEMP.
C1201 47U/10V
R1201 200K
R1203 2Ω7
C1206 330P
C1204 U33
D1201 SFH205G
C1202 1U/50V
R1202 22
IC 1201
UPC 1490 HA
R1207 22K
IR-VORVERST
IR PREAMPL
PREAMPL. IR
LED STAND BY ANZEIGE
LED STANDBY INDICATION
INDICATIONE DI POSIZIONE D'ATTESA LED
D6033 TLHR4200
IC 6030
MC 78 L05
C6033 U33
C6031 U1
C6032 100U 10V
+5V
STARTSCHALTUNG MIT IR AUSWERTUNG
START CIRCUIT WITH IR-ANALYSIS
PARTENZA CIRCUITA CON IR VALUTAZIONE
N1
N2
E
220-240V~
2X 400U
L6000
SI6001 T2A5
S6001
C6001 U15 MP3 250V~
2X 27M
L6001
C6002 U15 MP3 250V~
R6009 PTC
C6009 U1
L6010
ENTMAGNETISIERUNG
DEGAUSSING
SMAGNETIZZAZIONE
DEMAGNETISATION
PRIMAERMASSE ACHTUNG: NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE: NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION: NON ISOLE DU SECTEUR
MASSA PRIMARIO, ATTENZ.: NON SEPAR. DALLA RETE
NETZSCHALTERPL. 29304-065.51
-065.52
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE
C.I. INTERR. SECTEUR
NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE


KEYBOARD
C.I. DE COMMANDE
M
NORM
PERI
P/C
F
D801 BAT42
D803 BAT42
D806 BAT42
R801 4K7
R802 4K7
R803 4K7
R804 4K7
R806 4K7
R807 4K7
T802 BC327/40
T804 BC327/40
T807 BC327/40
R811 47K
R812 47K
R813 47K
+H
DP 881 HD 1131 G
DP 882 HD 1131 G
DP 883 HD 1131 G
AE
DP
LED-PLATTE 29305-017.02
LED-BOARD
PIASTRA LED
C.I. LED
STEREO
1
2
D881 LSK380
D886
D884
D887 D883 4X LSK380
D882 LSK380
D891 D892 2X LSK380
D893 D894 2X LGK380
D895 D896 2X LYK380
SECAM
PAL
NTSC
D852 TD129
D851 ZPD4V7
+B
C814 U1
R814 100K
T815 BC548B
D814 TD129
R815 470K
R821-R828 8 X 180
C831 220U/10V
4/7
C832 U1
R832-R835 4 X 560
D831 TD129
R836 1K
NI3
BEI NICAM
WITH
CON
POUR
NI CLK
IC 860
MC 6805 L8
ZC
(MOS)
RESET
PA0
PA1
PA2
PA5
PA4
PA3
PB7 PB6 PB2 PB1 PB3 PB4 PB5 PB0
VCC/STBY
PC4 PC0 PC2 PC1
PC7 PD0 PA7
PC5
PA6
PD4
INT PC6 XTAL EXTAL VSS PD6 PD3 PD7 PD1 PD2 PD5
D863 TD129
R863 47K
R864 33K
C866 U1
F871 4MHZ
C871 33P
C872 33P
C873 100P
R875 4K7
R878 4K7
R872 4K7
R879 4K7
R873 4K7
R874 4K7
R876 4K7
R877 4K7
D876 ZPD2V7
D877 ZPD2V7
R851 680
R852 680
C851 3N3
C852 3N3
R853 75
R854 68
R856 68
C854 3N3
C856 3N3
CH
CINCH AUDIO-R
CINCH AUDIO-L
CINCH VIDEO
H
KH AUDIO-L
KH AUDIO-R
R861 4K7
R862 4K7
ICL
TE
U KOIN 50/60HZ
U EURO-AV
R
NC
U SECAM
U PAL
MP
ENA ZF
SCL
VT SDA
SDA
VT SCL
IR
ED.-EINHEIT 29501-074.01
NTROL UNIT
ITA DI COMANDO
TE DE COMMANDE
C6011 U47
R6011 100K
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D6011 TD129
R6012 470K
C6013 33P
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WISCHER
TEMP. CONTACT
CONTATTO TEMP.
BETRIEB
OPERATION
FUNZIONAMENTO
STAND BY
15V
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IR-VORVERST
IR PREAMPL
PREAMPL. IR
LED STAND BY ANZEIGE
LED STANDBY INDICATION
INDICATIONE DI POSIZIONE D'ATTESA LED
D6033 LHR4200
C6033 U33
IC 6030 MC 78 L05
C6031 U1
C6032 100U 10V
+5V
N2
SI6001 T2A5
2X 400U
L6000
C6001 U15 MP3 250V~
2X 27M
L6001
C6002 U15 MP3 250V~
S6001
R6009 PTC
C6009 U1
ZUR BUCHSENPLATTE
TO SOCKET BOARD
ALLA PIASTRA PRESE
VERS C.I. PRISES
ZUM KH-VERST.
TO HEADPHONE AMPL.
ALL' AMPLIF. CUFFIA
VERS AMPLI CASQUE
ZUM CHASSIS
TO CHASSIS
AL TELAIO
VERS CHASSIS
ZUM FARB/RGB
TO COLOUR/RGB
AL MOD. COLORE/RVB
VERS MOD. DECODEUR/RVB
ZUM CHASSIS
TO CHASSIS
AL TELAIO
VERS CHASSIS

STARTSCHALTUNG MIT IR AUSWERTUNG
START CIRCUIT WITH IR-ANALYSIS
PARTENZA CIRCUITA CON IR VALUTAZIONE

NETZSCHALTERPL. 29304-065.51
-065.52
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE
C.I. INTERR. SECTEUR

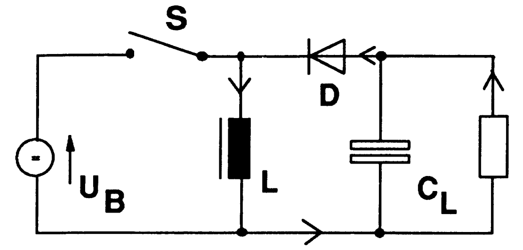
PRIMAERMASSE ACHTUNG: NICHT NETZGETRENNT
PRIMARY CHASSIS, NOTE: NOT MAINS ISOLATED
MASSE PRIMAIRE ATTENTION: NON ISOLE DU SECTEUR
MASSA PRIMARIO, ATTENZ.: NON SEPAR. DALLA RETE

NICHT NETZGETRENNTES SCHALTUNGSTEIL
CIRCUIT NOT MAINS - ISOLATED
CIRCUIT NON ISOLE DU SECTEUR
CIRCUITO NON SEPARATO DALLA RETE

D

SCHALTUNGSBESCHREIBUNG

Die prinzipielle Funktion beruht darauf, Gleichspannung mit einer Frequenz von 15 - 70 kHz zu zerhacken, zu transformieren und den sekundären Lastverhältnissen entsprechend, gleichzurichten.



Über einen mittels eines Regelkreises gesteuerten Schalter (S) liegt die Induktivität (L) an der Gleichspannung (U_B), so daß während der Leitphase des Schalters durch den linear ansteigenden Strom in der Induktivität ein Magnetfeld aufgebaut und Energie gespeichert wird. Die Gleichrichterdiode (D) ist gesperrt und entkoppelt den sekundärseitigen Verbraucher vom Eingangskreis. Nach Öffnen des Schalters, ist die EMK wirksam, schaltet die Diode durch, verbindet Verbraucher und Ladekondensator mit der Induktivität.

Die in den GRUNDIG - CUC - Geräten verwendete erweiterte Grundschaltung:

Hier übernimmt ein Übertrager die Funktion der Spule, der Schalter wird durch den Transistor BU 546 ersetzt. Die Energiezufuhr für die Sekundärseite erfolgt während der Sperrphase des Transistors über die Diode (D). Durch die Variation der Schaltfrequenz und des Tastverhältnisses wird ein hoher Stabilisierungsfaktor erreicht. Grundsätzlich wird die größte Energie bei niedriger Frequenz und geringem Tastverhältnis übertragen.
Die jeweiligen oberen bzw. unteren Grenzwerte werden durch die Schaltungs- bzw. physikalischen Gegebenheiten festgelegt.

Funktionsbeschreibung:

Das IC TDA 4601 kontrolliert steuert und schützt den Schalttransistor bei Anlauf-, Normal- und Überlastbetrieb.

Anlaufverhalten:

Es werden drei Betriebszustände durchlaufen, deren Abfolge notwendig ist, die kontrollierte Aufladung des Koppelelkos (C 631) und damit ein exaktes Schalten des Transistors zu gewährleisten.

1. **Aufbau der internen Referenzspannung**
   Sie versorgt den Spannungsregler und bewirkt die Aufladung des Koppelelkos (C 631). Bis zu einer Speisespannung von U_9 ≈ 12V bleibt die Stromaufnahme $I_9 < 3{,}2$mA.

2. **Freigabe der internen Spannungsversorgung - Referenzspannung U Pin 1 = 4V.**
   Diese Spannung wird schlagartig bei U Pin 9 ≈ 12V eingeschaltet; sie bildet für alle Teile des IC´s, bis auf die Steuerlogik, eine stabile und überlastfeste Stromversorgung.

3. **Freigabe der Steuerlogik**
   Unmittelbar mit der Referenzspannung wird die Stromversorgung der Steuerlogik über ein weiteres Stabilisierungsglied eingeschaltet, das IC ist betriebsbereit.

Das Netzteil erhält seine Anlaufspannung von der Wechselspannungsseite des Brückengleichrichters , über D616, R616 an den Pin 9 des TDA 460X. Durch die im Anlauf auf 3,2mA limitierte Stromaufnahme des IC 631 erfolgt das kontrollierte Aufladen des Ansteuerkondensators C631. Nachdem die Spannung an Pin 9 12V erreicht hat, wird an Pin 1 mit ≥4V eine stabile Referenzspannung aufgebaut. Das betriebsbereite IC schaltet nun über Pin 8 den Schalttransistor T634 durch, somit wird die Primärwicklung an die Gleichspannung des Ladekondensators C626 gelegt ($U_B = 305$V).

Nach Beendigung des Anlaufvorganges bezieht das IC631 seine Betriebsspannung (Pin 9) über die Versorgungswicklung des TR 651, Anschluß 9 und 11, D633, C633. Die Regelgrößen erhält das IC über die Rückkopplungswicklung des TR 651 (Anschluß 11 und 13, über R648 und R644 an Pin 2). Die über Pin 2 ausgewerteten Nulldurchgänge definieren den Start eines neuen Regelcyclus. Über D 647 und C 647 wird eine negative Gleichspannung gewonnen, die in Verbindung mit den Begrenzungswiderständen R 645 und R 643 sowie dem Poti R 647 dem Regelverstärkereingang wird an Pin 3 zugeführt wird. Dieser Regelspannung wird die Referenzgleichspanung von 4V überlagert. Der Einstellwiderstand R 647 dient im Normalbetrieb zur Einstellung der +A-Spannung und damit der Hochspannung.
Als Regelgröße für die Nachregelung des Netzteiles in Frequenz und Tastverhältnis wird die Spannungsänderung am Pin 3 des IC benutzt. Eine Begrenzung der Regelung sowie eine Überlastkennung wird durch eine sogenannte Kollektorstromnachbildung des Schalttransistors an Pin 4, in Verbindung mit R646 und C646 erreicht. Dabei wird dem Basisstrom ein über das RC-Glied C 646 und R 646 generierter Sägezahn aufaddiert, um bei steigendem Kollektorstrom un damit verbundenem Anstieg des Basisstromes die Kollektor-Emitter-Restspannung niedrig zu halten. Eine niedrige Kollektor-Emitter-Restspanung wird angestrebt, um die Ausräumzeit der Basis kurz zu halten.

Zur Überspannungsabschaltung wird von TR 651 Anschluß 13 über R 649, D 638, D 639, R 639 eine negative Gleichspannung an Pin 5 des IC 631 geführt. Steigt die Speisespannung +A, vergößert sich der Impuls an Anschluß 13 ebenfalls und schaltet den Pin 5 auf "LOW" (ca. 2,1 V), und damit das Netzteil ab.

Netzteil - "Stand by":

Bei "Stand by" Betrieb wird das Sperrwandler-Netzteil über die "Stand by"-Funktion des IC 631/TDA 4601(Pin 5/"LOW") vollständig abgeschaltet. Die Basis des Transistors T 6026 liegt auf "HIGH". Es fehlen deshalb alle Sekundärspannungen (+A, +G, -G, +C, +D, -H, +B, +E, +H).
Durch dieses Schaltungskonzept wird die Leistungsaufnahme im "Stand by"-Betrieb auf ca.5 Wh reduziert.
Um das Telepilot-Empfängerteil (IR-Vorverstärker IC 1201 und Slave-Prozessor IC 6010) betriebsbereit zu halten, wird über D 616, R 616, D 617 und C 616 eine **nicht netzgetrennte** Spannung von +15V erzeugt, und von IC 6030 auf +5V stabilisiert.
Die in Reihe geschaltete LED D 6033 im Display dient als "Stand by" - und Betriebsanzeige.
Das TP-Empfängerteil liegt auf **Netzpotential** und ist auf der Netzschalterplatte angeordnet.
Die notwendige **Netztrennung** für den Datenverkehr zwischen Slave-IC 6010 und Master-IC 860 erfolgt über die Optokoppler OK 6021 und OK 6024.

Schutzschaltung in der Horizontalendstufe:

Bei unzulässig hohem Strahlstrom (U/D 515 > -12 V) spricht die Schutzschaltung T 512 und TY 511 an (T 501 an Kollektor "LOW").Die Ansteuerung der Zeilenendstufe wird über IC 550/Pin 8 abgeschaltet. Zur Ermittlung des Fehlers kann die Schutzschaltung kurzzeitig außer Betrieb gesetzt werden. Hierzu Gerät ausschalten und an TY 511 Gate und Kathode kurzschließen. Dadurch wird die Zeilenendstufe wieder angesteuert.
Mögliche Ursachen:
a. bei hellem Bildschirm: RGB Stufen
b. bei dunklem Bildschirm: Kaskade oder Bildröhre

Hinweise für nebenstehendes Fluß - diagramm

1. Vor Wechseln des IC 631 oder T 634 ist auf jeden Fall C 626 (Ladeelko) über R > 10 kOhm zu entladen.

2. Nur Überlastungen der Sekundärspannungen +G und +A sind in der Lage, das Netzteil abzuregeln (das Netzteil "taktet"). In diesem Falle ist die jeweilige Diode D656, bzw. D681 kathodenseitig auszulöten, der Sekundärkreis mittels Ohmmeter auf Kurzschlüsse zu untersuchen. Es ist jeweils nur eine Diode auszulöten, um das IC631 nicht durch fehlende Grundlast zu gefährden. Bei Überlastung der anderen Sekundärspannungen fallen die entsprechenden Sicherungen (Si 661, Si 671) aus.

3. **Erklärung des "Taktens "**
   Darunter versteht man ein rhythmisches EIN/AUS des Schaltnetzteiles, zu messen am Pin 9 des IC631 (Anlaufspannung). Dies ist ein Zeichen dafür, daß sich IC 631 im Zustand "Schutzbetrieb mit periodischer Abfrage" befindet. Im Störfall ($U_{pin\ 5} < 2{,}1$V oder $U_{pin9} < 7.4$V) werden die Ausgangsimpulse Pin 8) gesperrt, d.h. der Basisstromabschalter klemmt Pin 7 auf 1,6V und schaltet somit über den Basisstromverstärker die Ansteuerung T 634 ab, Pin 5 wird intern auf Masse geklemmt. Die Stromaufnahme sinkt auf14 mA,und U_{pin9} unter 5,7V. Unterhalb dieser Spannung schaltet U_{ref} (Pin1) ab. Die Klemmung an Pin 5 wird aufgehoben und $I_{pin\ 9}$ sinkt unter 3,2mA. $U_{pin\ 9}$ steigt auf > 12,3 V, U_{ref} wird versuchsweise freigegeben, ebenso Pin 4 (Stand-by Eingang). Bei noch vorliegender Störung wiederholt sich der Vorgang.

4. **Spannungen am IC 631 bei verschiedenen Betriebszuständen**

Normalbetrieb		**IC 631 alleine** Si 644 unterbr/entnommen	
Pin	Spannung	Pin	Spannung
1	3,0V	1	1,5V
2	0,2V	2	---
3	2,0V	3	1,3V taktet
4	2,1V	4	0,1V taktet
5	Standby	5	6,9V taktet
6	Masse	6	Masse
7	2,1V	7	6,0V taktet
8	2,1V	8	6,0V taktet
9	12,1V	9	9,2V taktet

C 657 - Kurzschluß +A		**R 647 unterbrochen**	
Pin	Spannung	Pin	Spannung
1	3,1V taktet	1	4,1V
2	0V	2	0,2V
3	1,2V taktet	3	2,5V
4	6,5V taktet	4	2V
5	7,0V taktet	5	6,3V taktet
7	2,3V taktet	7	1,8V
8	0,1V taktet	8	1,8V
9	9,5V taktet	9	11,5V

   Die Spannungen an Pin5 und Pin 9 takten.

5. **Achtung!** Bei Messungen an Pin 2 und Pin 3: u. U. kann bereits durch den Meßvorgang das IC 631 in Mitleidenschaft gezogen werden. Es wird die Verwendung eines Meßinstrumentes mit Ri > 50 kΩ/V und einer Meßspitze von 200 k Ohm empfohlen.Wird ein Oszilloskop zu Messungen benützt,solte der Tastkopfteiler auf 1 : 10 stehen, damit eine Gefährdung durch Eingangskapazitäten des Oszilloskops ausgeschlossen werden.

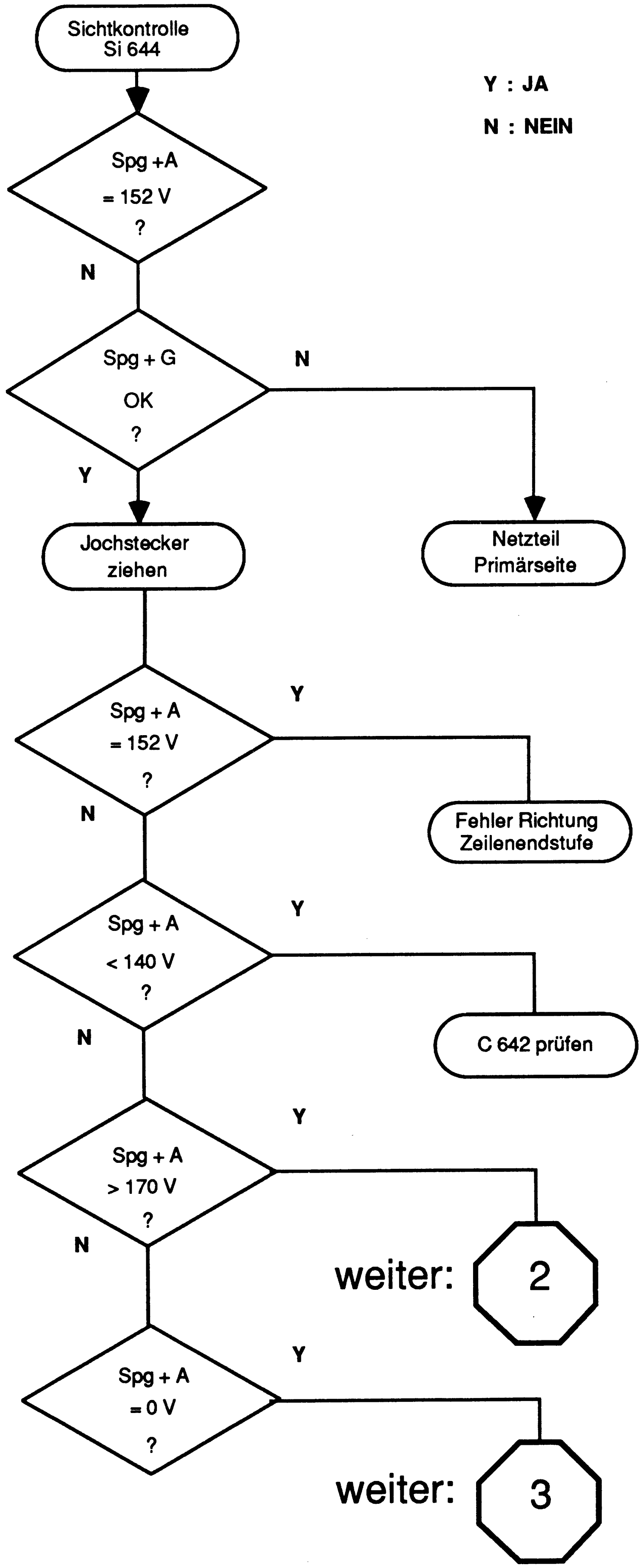
6. Fehlt die Hochspannung, demzufolge die +C-Spannung, so kann ebenfalls eine Unterbrechung des Netzteil-IC-Regelkreises vorliegen. In diesem Fall beträgt die +E-Spannung statt 8V nur 6,5V - 7V. Da aber die minimale Betriebsspannung für den Zeilenendstufentreiber TDA 8140 7V beträgt, schaltet dieser bei Unterschreiten der Spannungsschwelle ab.

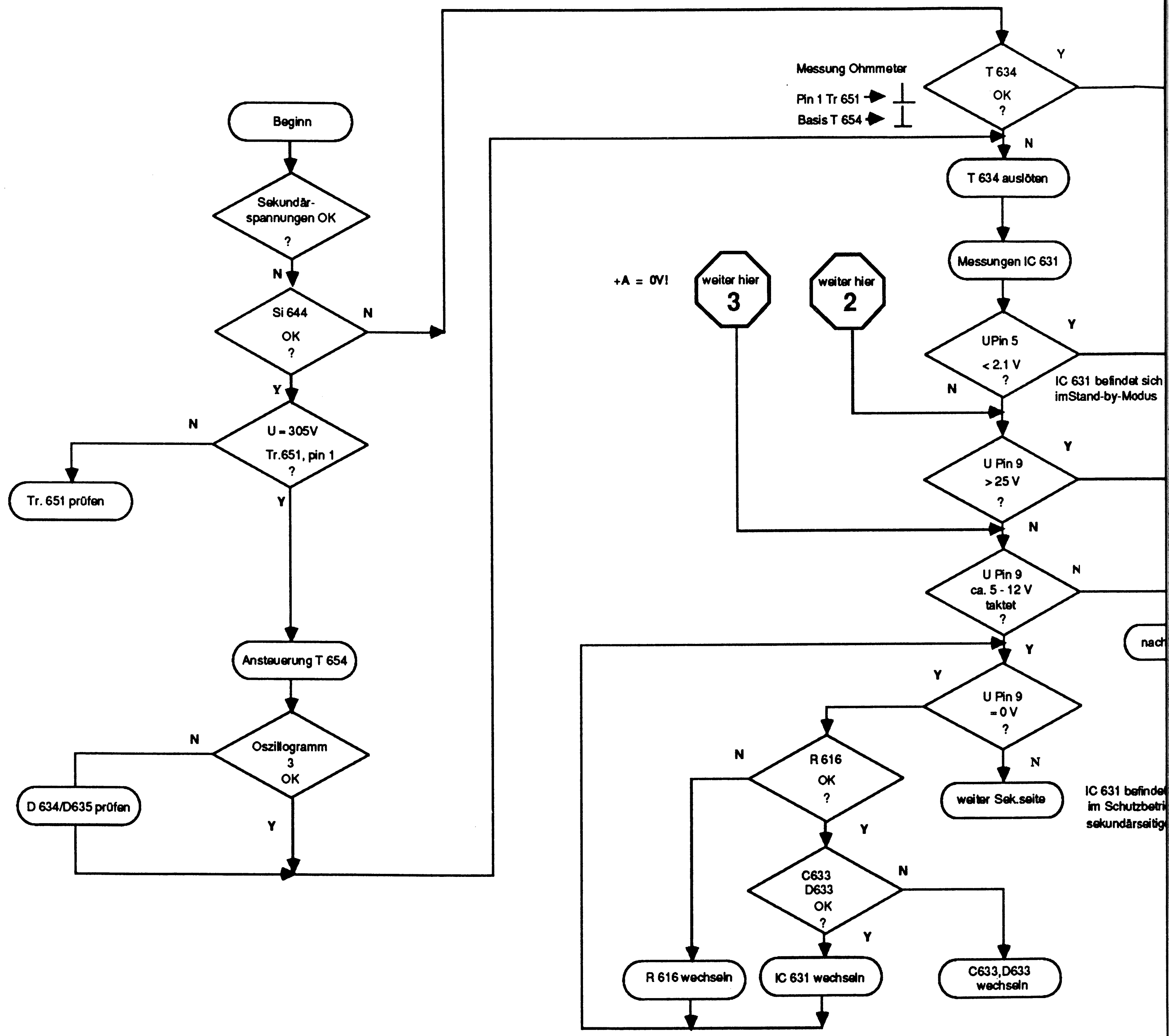
7. Bleibt das Gerät im Stand-by-Modus, ist die Spannung am Pin 5 des IC631 zu messen. Ist die Spannung kleiner als 2,1V, genau: $U_{pin5} \leq U_{ref} / 2 - 0{,}1$V, läuft das Gerät nicht aus dem Schutzbetrieb / Stand-by-Modus an. Ist die Spannung vorhanden, ist der Fehler in Richtung Abstimmbaustein zu suchen.

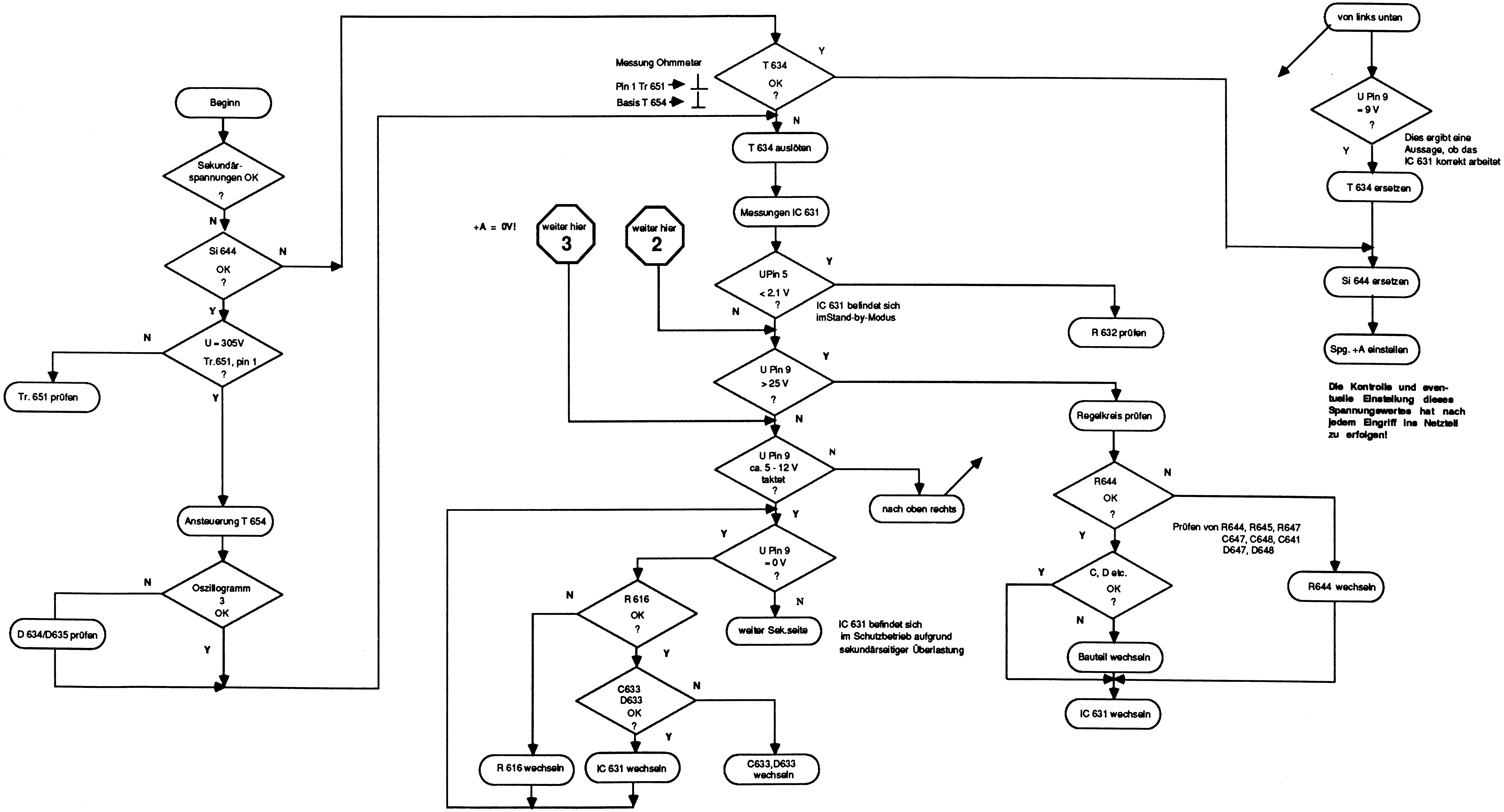
die +C-Spannung, so
des Netzteil-IC-Regel-
lie +E-Spannung statt
le Betriebsspannung für
7V beträgt, schaltet die--
nwelle ab.

t die Spannung am Pin 5
nung kleiner als 2,1V,
las Gerät nicht aus dem
t die Spannung vorhan-
austein zu suchen.

Fehlersuchdiagramm


Sichtkontrolle
Si 644
Y : JA
N : NEIN
Spg +A
= 152 V
?
N
Spg + G
OK
?
N
Y
Jochstecker
ziehen
Netzteil
Primärseite
Spg + A
= 152 V
?
Y
N
Fehler Richtung
Zeilenendstufe
Spg + A
< 140 V
?
Y
N
C 642 prüfen
Spg + A
> 170 V
?
Y
N
weiter:
2
Spg + A
= 0 V
?
Y
weiter:
3

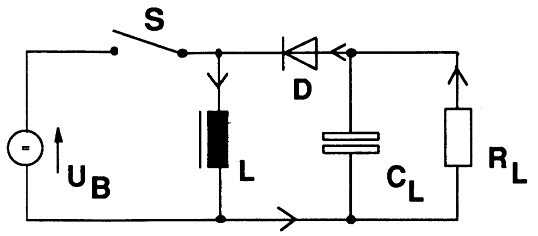

Beginn
Sekundär-
spannungen OK
?
N
Si 644
OK
?
N
Y
U = 305V
Tr.651, pin 1
?
N
Tr. 651 prüfen
Y
Ansteuerung T 654
Oszillogramm
3
OK
N
D 634/D635 prüfen
Y
Messung Ohmmeter
Pin 1 Tr 651
Basis T 654
T 634
OK
?
Y
N
T 634 auslöten
Messungen IC 631
+A = 0V!
weiter hier
3
weiter hier
2
UPin 5
< 2.1 V
?
Y
N
IC 631 befindet sich
imStand-by-Modus
U Pin 9
> 25 V
?
Y
N
U Pin 9
ca. 5 - 12 V
taktet
?
N
Y
nach
U Pin 9
= 0 V
?
Y
N
weiter Sek.seite
IC 631 befinde
im Schutzbetri
sekundärseitig
R 616
OK
?
N
Y
C633
D633
OK
?
N
Y
R 616 wechseln
IC 631 wechseln
C633,D633
wechseln


Beginn
Sekundär-spannungen OK ?
N
Si 644 OK ?
N
Y
U = 305V Tr.651, pin 1 ?
N
Tr. 651 prüfen
Y
Ansteuerung T 654
Oszillogramm 3 OK
N
D 634/D635 prüfen
Y
Messung Ohmmeter
Pin 1 Tr 651
Basis T 654
T 634 OK ?
Y
N
T 634 auslöten
Messungen IC 631
UPin 5 < 2.1 V ?
Y
IC 631 befindet sich imStand-by-Modus
R 632 prüfen
N
+A = 0V!
weiter hier 3
weiter hier 2
U Pin 9 > 25 V ?
Y
Regelkreis prüfen
N
U Pin 9 ca. 5 - 12 V taktet ?
N
nach oben rechts
Y
U Pin 9 = 0 V ?
Y
N
weiter Sek.seite
IC 631 befindet sich im Schutzbetrieb aufgrund sekundärseitiger Überlastung
R 616 OK ?
N
R 616 wechseln
Y
C633 D633 OK ?
N
C633,D633 wechseln
Y
IC 631 wechseln
R644 OK ?
N
R644 wechseln
Prüfen von R644, R645, R647 C647, C648, C641 D647, D648
Y
C, D etc. OK ?
Y
N
Bauteil wechseln
IC 631 wechseln
von links unten
U Pin 9 = 9 V ?
Y
Dies ergibt eine Aussage, ob das IC 631 korrekt arbeitet
T 634 ersetzen
Si 644 ersetzen
Spg. +A einstellen
Die Kontrolle und eventuelle Einstellung dieses Spannungswertes hat nach jedem Eingriff ins Netzteil zu erfolgen!

GB

CIRCUIT DESCRIPTION

The principle functions carried out by the circuit are to chop the DC voltage at a frequency of 15-70 kHz, to transform and rectify so that the load relationship is correctly maintained on the secondaries.



The inductance (L) is connected to the DC voltage source (U1) via a switch (S) activated by a control circuit, so that during the conduction phase of the switch a linear rising current in the inductance causes a magnetic field to build up and for energy to be stored. The rectifying diode (D) is cut off and decouples the secondary load from the input circuit. After the switch is open, the EMF becomes effective, the diode conducts and connects the load and the charging capacitor to the inductance.

The expanded basic circuit as used in the GRUNDIG - CUC models:

The transformer takes over the function of the coil, the switch is taken over by the transistor BU 546. The energy source for the secondary is during the switch-off phase of the transistor via the diode (D). Due to the variation of the switching frequency and the duty cycle a very high stabilising factor is achieved. Basically the frequency is low when the energy consumption is high and during this the cycle is also low, that means during a long period of current flow a maximum energy storage in the transformer is possible.

The appropriate upper and lower limiting values are fixed by the circuit and by physical values.

Function Description:

The ICs TDA 4601checks, drives and protects the switching transistor during the start-up normal and overload modes.

Start-up Process:

There are three operating modes carried out during which the sequences is important. The monitoring of the charging of the coupling capacitor (C631) and with it the correct switching of the transistor is realised.

1. **Building up of the internal reference voltage.**
   This operates as a voltage regulator and provides charging of the coupling capacitor (C631). Until the input voltage to U_g = 12V,the current consumption $I_g < 3.2$mA.

2. **Release of the internal voltage supply -**
   Reference voltage U1 = 4V.
   This voltage is present as soon as U_g = 12V; this provides, for all stages in the IC up to the control stage, a stable and overload controlled current supply.

3. **Release of the control logic.**
   With the reference voltage present the current supply to the control logic is provided via an additional stabilising circuit simultaneously, the IC is then in operating mode.

The power supply contains a starting voltage from the AC voltage side of the bridge rectifier via D616, R616 to pin 9 of the TDA 4601. Due to the fact that the start circuit provides a limited current consumption of 3.2mA the IC can check the charging of the drive capacitor C631. After the voltage on pin 9 has reached 12V, pin 1 will feed out a stable reference voltage of ≥4V. The IC now in operating mode switches the transistor T634 on via pin 8 so that the primary winding is connected to the DC voltage on the charging capacitor C626 (U = 305V).

After completion of the start-up process the IC631 draws operating voltage (pin 9) via the supply winding of Tr651, contact 9 and 11, D633, C633. The control amplitude is obtained for the IC via the feed back winding of Tr651 (contact 11 and 13), via R648 and R644 to pin 2). From pin 2the control logic defines the zero cross-over and the start of a control cycle. This is evaluated for control purposes. For this a negative DC voltage is obtained from D647 and C647 which in combination with the limiting resistors R649 and R643 and also R647 is connected to the control amplifier input on pin 3. This control voltage is combined with the reference DC voltage of 4V. The adjustment resistor R647 serves for the adjustment of the +A voltage in normal operation and with it also the adjustment for the EHT.
As a control amplitude for the adjustment of the mains stage frequency and duty cycle the current change on pin 3 of the IC is used. The limiting of the control, as well as the overload identification, is obtained from the so called "collector current simulation" of the switching transistor on pin 4 in combination with R646 and C646. To the basis current a saw-tooth current, generated via C646 and R646 is added in order to keep the collector saturation voltage low while collector current and basis current are increasing. A low collector saturation voltage is aquired to keep the reverse base control time low.

As measurement of overvoltage protection a negative voltage is fed into IC 631 (Pin 5) via Pin 13, R 649, D 638, D 639, R639. If the voltage +A increases, the pulse on Pin 13, IC 631 increases, too and switches pin 5 to "LOW" - level (approx. 2,1 V), this switches the power supply off.

"Stand by" - mode:

On "Stand by" mode the Blocking Oscillator Converter - Mains Stage is completely switched off by the "Stand by" function of IC 631/TDA 4601
(pin 5/"LOW"). The base of Transistor T 6026 is taken to "HIGH". Consequently, all secondary voltages are absent (+A, +G, -G, +C, +D, -H, +B, +E, +H).
Due to this circuit concept the power consumption on "Stand by" mode is reduced to approx. 5 Wh.
To allow the TP-Receiver stages (IR-Preamplifier IC 1201 and the Slave-Processer IC 6010) to be in operation, a **Non Isolated Voltage** of +15 V is generated by D 616, R 616, D 617 and C 616 and this is stabilised to +5 V by IC 6030.
The LED D 6033 serves as the "Stand by" and Operating Indicator in the Display.
The TP-Receiver stage operates at **mains potentials** and is located on the mains circuit panel.
The necessary **mains isolation** for the data traffic between the Slave-IC 6010 and the Master-IC 860 is accomplished by the Optocouple OK 6021 and OK 6024.

Protective circuit in the line output stage:

If an undue higher beam current occurs, (U/D 515 > -12 V) the protective circuit T 512 and Ty 511 is activated (Collector T 501 goes to "LOW"- Level). The driving pulses of the line output stage are switched off via pin 8/IC 550. The protective circuit can be deactivated for a short period in case of fault search. Switch off the set and shorten gate and kathode of Ty 511. The output stage will be driven again.
Possible reasons:
a. if screen of picture tube is bright: RGB stages
b. if screen of picture tube is dark: cascade or CRT

HINTS FOR REPAIR FAULT FINDING DIAGRAM.

1. Before replacing the IC631 or T654 the C626 (charging capacitor) must be discharged with a resistor of R≥10kΩ in every case.

2. With operating during a fault with an excess of voltage +A (≥170V) the capacitor C682 (+G) and IC631 will be damaged. The overvoltage + results in a "stand-by mode" due to a break in the control circuit for IC631. The voltage +A will now rise over the normal value of 170V in stand-by mode.

3. Explanation of "Pulsating".

   With this one understands that a rhythmic ON/OFF switching of the switch mode power supply occurs, which can be measured on pin 9 of IC631 (start up voltage). This is an indication, that IC631 is in the "protective mode with periodic scanning" state. In defective cases, (U_{pin} 5 <2.1V or U_{pin} 9<7.4V) the output. pulse pin 8 is switched off as the base current switch clamps pin 7 to 1.6V and T654 is switched of via the base current amplifier. Pin 5 will be clamped to chassis by the internal circuit. The current consumption reduces to approximately 14mA, the voltage U_{pin} 9 drops below 5.7V, below this voltage the reference voltage U_{ref}(pin 1) is switched off; this lifts the clamping on pin 5. The current consumption I_{pin} 9 drops below 3.2mA, the voltage U_{pin} 9 rises >12.3V, the voltage U_{ref} is again released and also pin 5. (Stand-by input). If the defect is still present the process is repeated.

4. Voltages on IC631 with different operating states.

Normal Mode I		IC 631 Alone Si 644 open circuit/ removed	
Pin	Voltage	Pin	Voltage
1	3.0V	1	1.5V
2	0.2V	2	—
3	2.0V	3	1.3V Pulsating
4	2.1V	4	0.1V Pulsating
5	Standby	5	6,5V Pulating
6	Chassis	6	Chassis
7	2.1V	7	6.0V Pulsating
8	2.1V	8	6.0V Pulsating
9	12.1V	9	9.2V Pulsating

C657 - Short Circuit +A   R647 Open Circuit

Pin	Voltage	Pin	Voltage
1	3.1V Pulsating	1	4.1V
2	0V	2	0.2V
3	1.2V Pulsating	3	2.5V
4	6.5V Pulsating	4	2V
5	7.0V Pulsating	5	6.3V Pulsating
7	2.3V Pulsating	7	1.8V
8	0.1V Pulsating	8	1.8V
9	9.5V Pulsating	9	11.5V

The voltages on pins 5 and 9 pulsates.

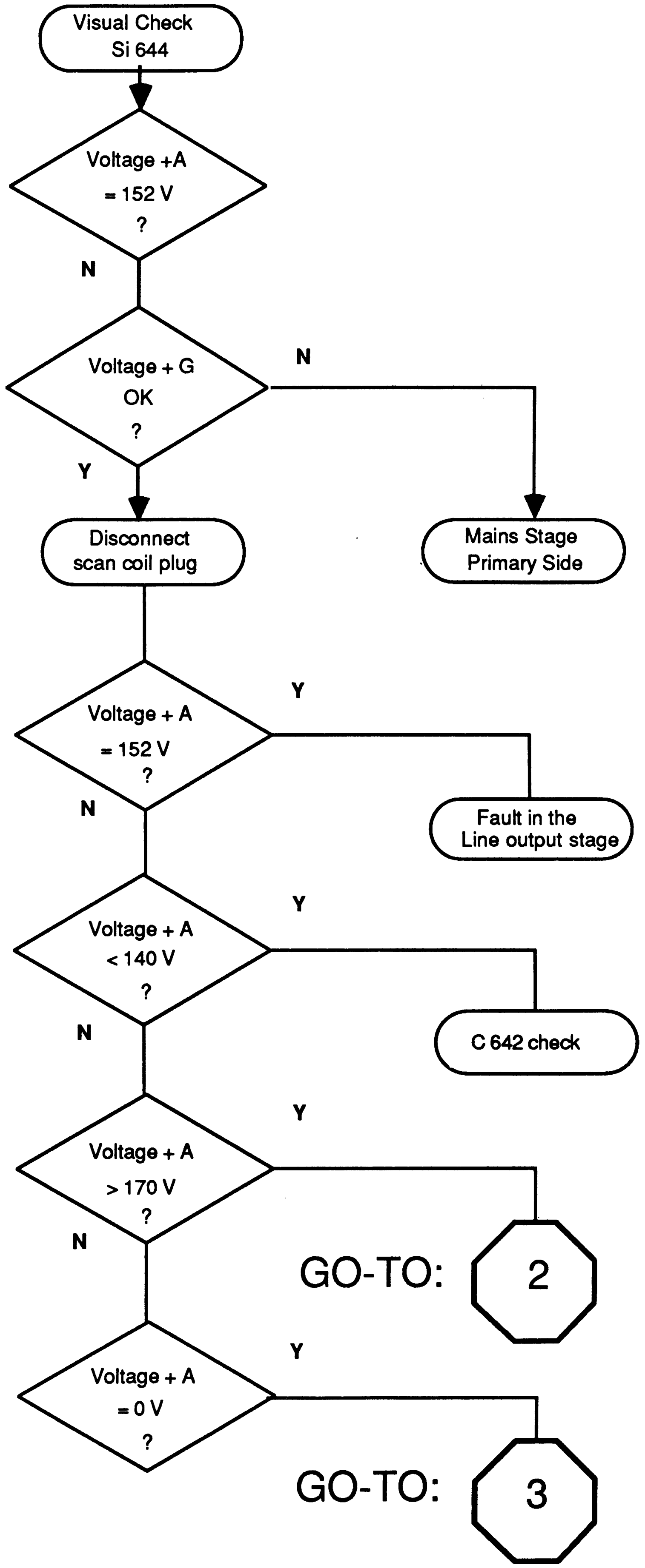
5. **Attention** - When measuring on pin 2 and 3; due to the test procedure readings on the IC631 can be affected. The test instruments used therefore have a probe with built-in protective resistor > 200kΩ.If an oscilloscope is used for measurements,the attenuator probe must be switched to 1:10. This is to protect the circuitry against damages caused by the input capacities of the scope.

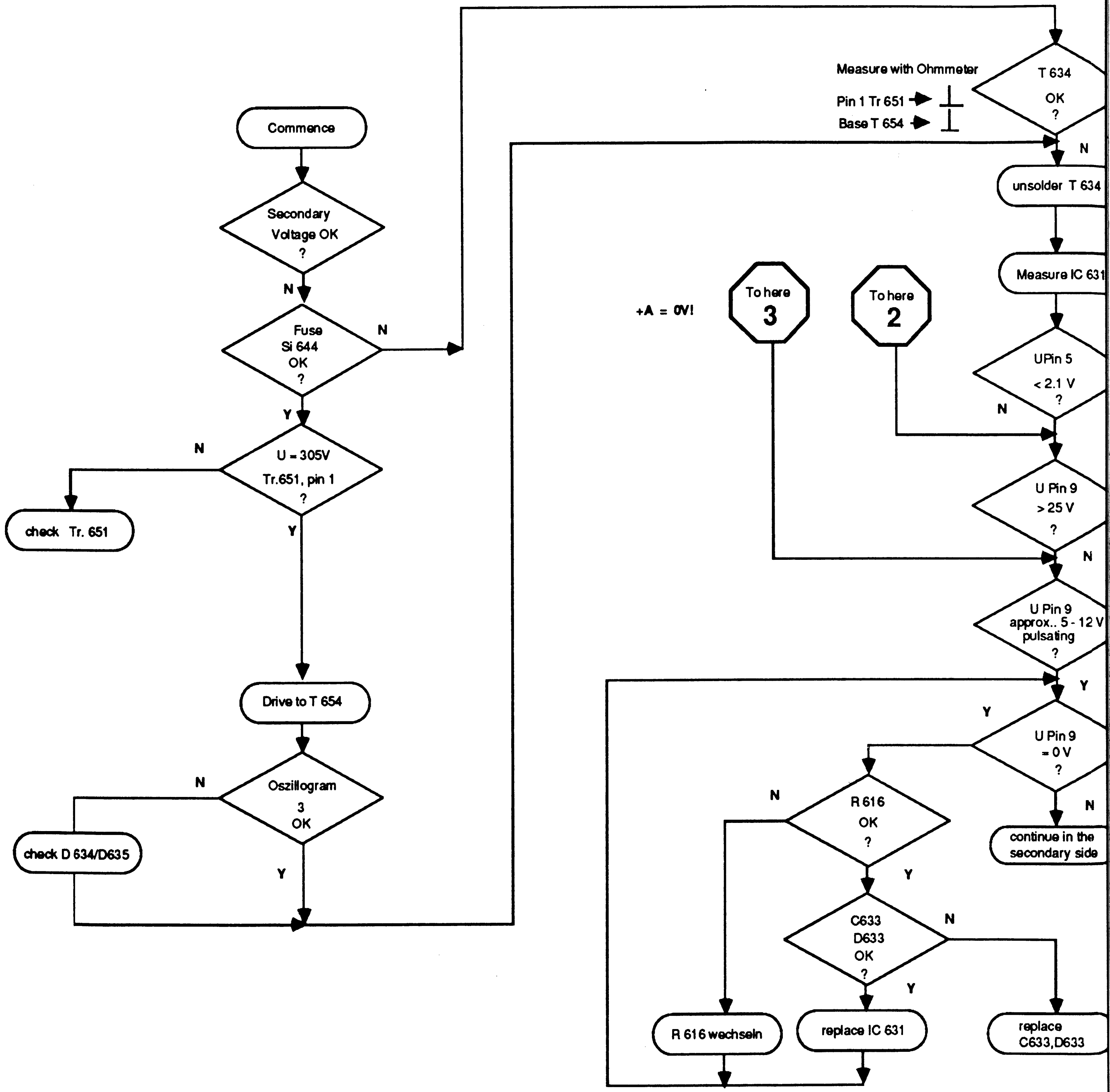
6. If the EHT is missing, so will the +C voltage, and from this a break in the mains stage-IC-Control circuit is established. In these cases the +E voltage will be only 6.5V-7.0V instead of 8V. As the minimum operating voltage for the line output stage driver IC TDA 8140 is 7.0V, the IC switches off as the voltage threshold is not obtained.

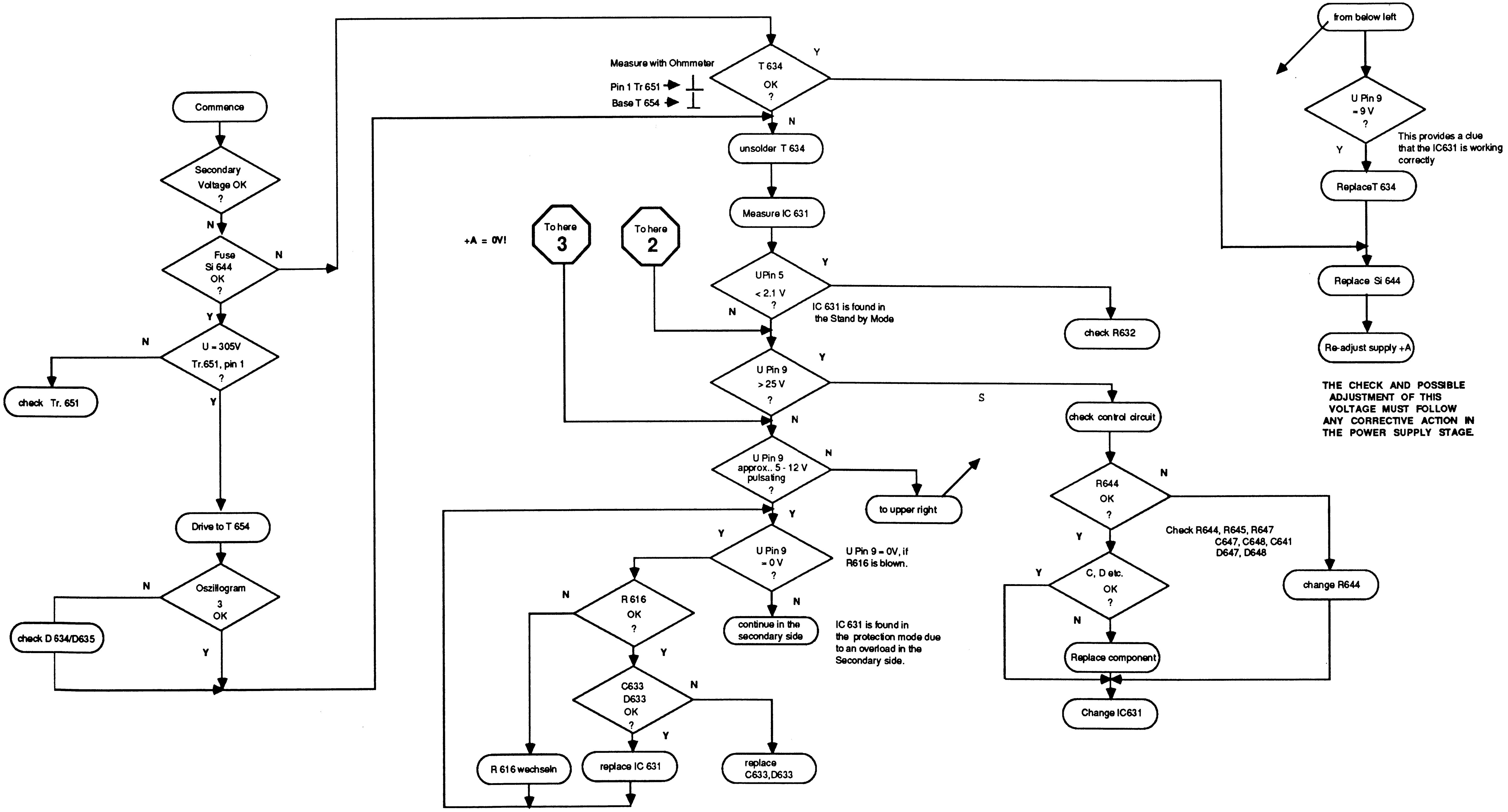
7. If the receiver remains in stand-by mode, the voltage in pin 5 of IC 631 be measured. If the is less than 2,1V, but is: U $_{pin}$ 5 ≤ U ref/2 - 0,1V, the receiver will not switch from the protection mode/standby-mode. If the voltage is present, the fault should be looked for in the area of the tuning module.

ode, the voltage in pin 5 of
n 2,1V, but is: U $_{pin}$ 5 ≤ U
witch from the protection
s present, the fault should
odule.

FAULT FINDING DIAGRAM


Visual Check
Si 644
Voltage +A
= 152 V
?
N
Voltage + G
OK
?
N
Mains Stage
Primary Side
Y
Disconnect
scan coil plug
Voltage + A
= 152 V
?
Y
Fault in the
Line output stage
N
Voltage + A
< 140 V
?
Y
C 642 check
N
Voltage + A
> 170 V
?
Y
GO-TO:
2
N
Voltage + A
= 0 V
?
Y
GO-TO:
3

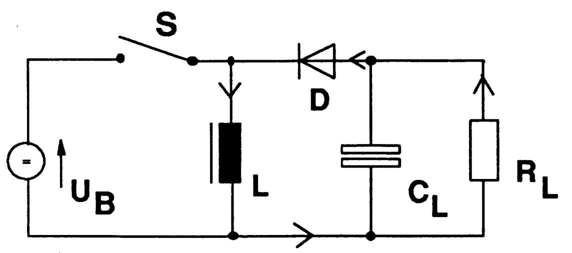

Measure with Ohmmeter
Pin 1 Tr 651
Base T 654
T 634
OK
?
N
unsolder T 634
Measure IC 631
Commence
Secondary
Voltage OK
?
N
Fuse
Si 644
OK
?
N
Y
U = 305V
Tr.651, pin 1
?
N
check Tr. 651
Y
Drive to T 654
Oszillogram
3
OK
N
check D 634/D635
Y
+A = 0V!
To here
3
To here
2
UPin 5
< 2.1 V
?
N
U Pin 9
> 25 V
?
N
U Pin 9
approx.. 5 - 12 V
pulsating
?
Y
Y
U Pin 9
= 0 V
?
N
continue in the
secondary side
R 616
OK
?
N
Y
C633
D633
OK
?
N
Y
R 616 wechseln
replace IC 631
replace
C633,D633


Commence
Secondary Voltage OK ?
N
Fuse Si 644 OK ?
N
Y
U = 305V Tr.651, pin 1 ?
N
check Tr. 651
Y
Drive to T 654
Oszillogram 3 OK
N
check D 634/D635
Y
Measure with Ohmmeter
Pin 1 Tr 651
Base T 654
T 634 OK ?
Y
N
unsolder T 634
Measure IC 631
+A = 0V!
To here 3
To here 2
UPin 5 < 2.1 V ?
Y
N
IC 631 is found in the Stand by Mode
check R632
U Pin 9 > 25 V ?
Y
S
N
check control circuit
U Pin 9 approx.. 5 - 12 V pulsating ?
N
to upper right
Y
U Pin 9 = 0 V ?
Y
U Pin 9 = 0V, if R616 is blown.
N
continue in the secondary side
IC 631 is found in the protection mode due to an overload in the Secondary side.
R 616 OK ?
N
Y
C633 D633 OK ?
N
Y
R 616 wechseln
replace IC 631
replace C633,D633
R644 OK ?
N
Y
Check R644, R645, R647 C647, C648, C641 D647, D648
change R644
C, D etc. OK ?
Y
N
Replace component
Change IC631
from below left
U Pin 9 = 9 V ?
Y
This provides a clue that the IC631 is working correctly
ReplaceT 634
Replace Si 644
Re-adjust supply +A

THE CHECK AND POSSIBLE ADJUSTMENT OF THIS VOLTAGE MUST FOLLOW ANY CORRECTIVE ACTION IN THE POWER SUPPLY STAGE.

DESCRIZIONE CIRCUITALE

La funzione principale consiste nell'interrompere una componente continua con una frequenza da 15 a 70 kHz, da trasformare e raddrizzare conformente alle esigenze di carico del secondario.



Mediante un interruttore (S) comandato da un circuito di regolazione , l'induttanza (L) è sottoposta alla tensione continua (UB). Durante la fase conduttiva dell'interruttore si manifesta nell'induttanza una corrente che cresce linearmente la quale a sua volta genera un campo magnetico e quindi avviene un accumulo di energia. Il diodo raddrizzatore (D) è bloccato e separa il carico secondario dal circuito d'ingresso. Dopo l'apertura dell'interruttore la F.E.M. è attiva, fa condurre il diodo, collega il carico ed il condensatore all'induttanza.

Il circuito di base impiegato negli apparecchi CUC GRUNDIG:

In questo circuito la funzione della bobina viene svolta da un trasduttore e l'interruttore viene sostituito da un transistor BU... L'energia per il secondario viene fornita durante la fase di interdizione del transistor attraverso il diodi (D). Mediante la variazione della frequenza di commutazione e del rapporto di cadenza viene ottenuto un fattore di stabilizzazione elevato. Fondamentalmente la maggiore quantità di energia viene trasmessa a bassa frequenza e von basso rapporto di cadenza.
I valori limite superiore e inferiore vengono stabiliti dalle caratteristiche del circuito e da leggi fisiche.

Prospetto delle funzioni:

L'integrato TDA 4601 controlla, comanda e protegge il transistor di commutazione durante la fase di spunto, a regime e in caso di sovraccarico.

Fase di spunto:

Di fatto si manifestano tre situazioni la cui successione è molto importante in quanto garantisce la carica controllata dell'elettrolitico C 631 e quindi l'esatta commutazione del transistor.

1. **Formazione della tensione di riferimento interna**
   Essa alimenta il regolatore di tensione e produce la carica dell'elettrolitico C 631. Fino ad una tensione di alimentazione intorno ai 12 V, l'assorbimento di corrente rimane inferiore a 3,2 mA.

2. **Consenso della tensione di alimentazione interna - tensione di riferimento U pin 1 = 4 V**
   Questa tensione viene attivata velocemente con ≈ 12 V al pin 9; per tutte le parti dell'integrato fino alla logica di comando, essa rappresenta una tensione stabile e resistente ai sovraccarichi.

3. **Consenso della logica di comando**
   Contemporaneamente alla tensione di riferimento viene inserita anche quella di alimentazione della logica di comando tramite un'ulteriore rete di stabilizzazione. L'integrato è pronto al funzionamento.

L'alimentatore riceve la sua tensione di spunto dalla sezione a tensione alternata del raddrizzatore a ponte, attraverso D 616, R 616 al pin 9 del TDA 460X. Per mezzo dell'assorbimento di corrente di IC 631 limitato a 3,2 mA in fase di avvio avviene la carica controllata del condensatore C 631. Quando la tensione al pin 9 ha raggiunto 12 V, al pin 1, viene formata una tensione di riferimento stabile ≥ 4 V. L'integrato abilitato, attraverso il pin 8, fa condurre il transistor T 634 e quindi l'avvolgimento primario risulta collegato alla tensione continua del condensatore C 626 (UB=305 V).

Concluso il processo d'avviamento, l' IC 631 riceve la sua tensione d'alimentazione (pin 9) dall'avvolgimento di alimentazione di TR 651, contatti 9 e 11, D 633, C 633. Le entità di regolazione giungono al pin 2 dell'integrato tramite l'avvolgimento di reazione di TR 651 (contatti 11 e 13), R 648 e R 644. I passiggi per lo zero identifacati al pin 2 definiscono l'avvio di un nuovo ciclo di regolazione. Tramite D 647 e C 647 viene ottenuta una tensione continua negativa, la quale attraverso le resistenze di limitazione R 645 e R 643, il potenziometro R 647 e l'ingresso dell'amplificatore di controllo viene condotta al pin 3. Questa tensione di regolazione viene sovrapposta a quella continua di riferimento di 4 V. Il potenziometro R 647 serve in regime normale per la regolazione della tensione +A e quindi dell'alta tensione.
Come entità di regolazione per la correzione della frequenza e del rapporto di cadenza dell'alimentatore viene utilizzata la variazione in tensione al pin 3 dell'integrato. Una limitazione della regolazione come pure un'individuazione di sovraccarico vengono eseguite mediante una cosiddetta simulazione della corrente di collettore del transistor al pin 4 insieme a R 646 e C 646. Per questo alla corrente di base viene aggiunto un segnale a dente di sega generato dalla rete RC C 646 e R 646 per contenere la tensione residua collettore-emettitore in caso di aumento della corrente di collettore e quindi di base. Una bassa tensione residua viene sfruttata per estinguere la corrente di base in breve tempo.

Per evitare covratensioni, tramite TR 651, contatto 13, R 649, D 638, D 639 viene trasferita al pin 5 di IC 631 una tensione continua negativa. Quando aumenta la tensione +A aumenta anche l'impulso al contatto 13 e pone il pin 5 a livello "LOW" (ca. 2,1 V), quindi l'alimentatore si spegne.

Situazione "Stand by":

In "Stand by" l'alimentatore con convertitore ad interdizione viene completamente disattivato dalla funzione "Stand by" di IC 631/TDA 4601 (pin 5 /"LOW"). La base del transistor T 6026 è a livello "HIGH" per cui mancano tutte le tensioni secondarie (+A, +G, -G, +C, +D, -H, +B, +E,+H).
Grazie a questo concetto, l'assorbimento in "Stand by" viene ridotto a ca. 5 Wh.
Per matenere attivata la sezione ricevente del telecommando (preamplif. ad infrarossi IC 1201 e processore Slave IC 6010), mediante D 616, R 616, D 617 e C 616 viene prodotta una tensione di +15V **non separata dalla rete**, successivamente stabilizzata a +5V da IC 6030.
Il LED D 6033 inserito in serie, sul display serve quale indicatore delle situazioni "Stand by" e di regime.
La sezione ricevente TP si trova a **potenziale di rete** ed è sistemata sulla piastra de commutatore di rete.
La **separazione di rete** necessaria per lo scamio dei dati tra Slave (IC 6010) e Master (IC 860) avviene attraverso l'optoaccoppiatore OK 6021 e OK 6024.

Circuito di protezione nello stadio finale orizzontale:

Quando la corrente di raggio è eccessiva (tens. al diodo D 515 > - -12 V), interviene il circuito di protezione T 512 e TY 511 (livello "LOW" al collettore di T 501). Il comando del finale orizzontale viene interotto attraverso il pin 8 di IC 550. Per l'individuazione del difetto, il curcuito di protezione può essere brevemente escluso. Per questo spegnere l'apparecchio e cortocircuitare gate e catodo di TY 511. In questo modo il finale di riga viene nuovamente comandato. Causa possibili:
a. con schermo chiaro: stadi RVB
b. con schermo scuro: cascade o cinescopio.

Note Riguardanti il Diagramma di Flusso

1. Prima di sostituire l'IC 631 o il transistor T 634 occorre in ogni caso scaricare l'elettrolitico C 626 attraverso una resistenza superiore a 10 KOhm.

2. Solo sovraccharichi alle tensioni secondarie +G e +A sono in grado di far intervenire il processo di regolazione dell'alimentatore (l'alimentatore "pulsa"). In questo caso occorre dissaldare il relativo diodo D 656 o D 681 sul lato del catodo per poter ricercare mediante ohmmetro se esiste un cortocircuito nel circuito secondario. Dissaldare un diodo per volta in modo che l'IC 631 non rimanga senza carico di base. Sovraccarichi alle altre tensioni secondarie fanno intervenire i fusibili SI 661, Si 671.

3. **Spiegazione sul processo d'intervento**
   Si può intendere come un'accensione ed uno spegnimento ritmici dell'alimentatore di commutazione, misurabili al pin 9 di IC 631 (tensione di spunto). Questo è un'indicazione che l'IC 631 si pone periodicamente nella situazione di protezione. In caso di avaria (U pin 5 < 2,1 V o U pin 9 < 7,4 V), gli impulsi in uscita al pin 8 vengono bloccati per cui il comando della corrente di base fissa il pin 7 a 1,6 V e così interrompe il pilotaggio di T 634 mediante l'amplificatore della corrente di base; il pin 5 viene portato internamente a massa. L'assorbimento di corrente scende a 14 mA e la tensione a pin 9 inferiormente a 5,7 V. Al di sotto di questo valore si interrompe la tens. di riferim. (pin 1). Il blocco al pin 5 viene tolto ed il valore I al pin 9 scende sotto 3,2 mA. La tens. al pin 9 aumenta > 12,3 V e la tens. di riferim.viene abilitata in via di prova e cosi anche il pin 4 (ingresso stand-by).
   Se il difetto rimane, il processo di regolazione si ripete da capo.

4. **Tensioni all'IC 631 per diverse situazioni**

Funzionamente normale		**Solo IC 631** SI 644 interotto/prelevare	
Pin	Tensione	Pin	Tensione
1	3,0V	1	1,5V
2	0,2V	2	—
3	2,0V	3	1,3V ritmici
4	2,1V	4	0,1V ritmici
5	Standby	5	6,9V ritmici
6	Massa	6	Massa
7	2,1V	7	6,0V ritmici
8	2,1V	8	6,0V ritmici
9	12,1V	9	9,2V ritmici

C 657 -cortocircuito + A		**R 647 interrotta**	
Pin	Tensione	Pin	Tensione
1	3,1V ritmici	1	4,1V
2	0V	2	0,2V
3	1,2V ritmici	3	2,5V
4	6,5V ritmici	4	2V
5	7,0V ritmici	5	6,3V ritmici
7	2,3V ritmici	7	1,8V
8	0,1V ritmici	8	1,8V
9	9,5V ritmici	9	11,5V

   Le tensioni ai pin 5 e 9 sono ritmiche.

5. **Attenzione** durante le misure ai pin 2 e 3: in determinate circostanze l'integrato IC 631 può venir danneggiato anche nel corso di una misurazione. Si raccomanda l'uso di uno strumento con Ri superiore a 50 KOhm/V e con sonda da 200 kOhm. Se viene utilizzato un oscilloscopio, la sonda deve avere partitore 1 : 10 in modo da evitare inconvenienti a causa dalle capacità d'ingresso dell'oscilloscopio stesso.

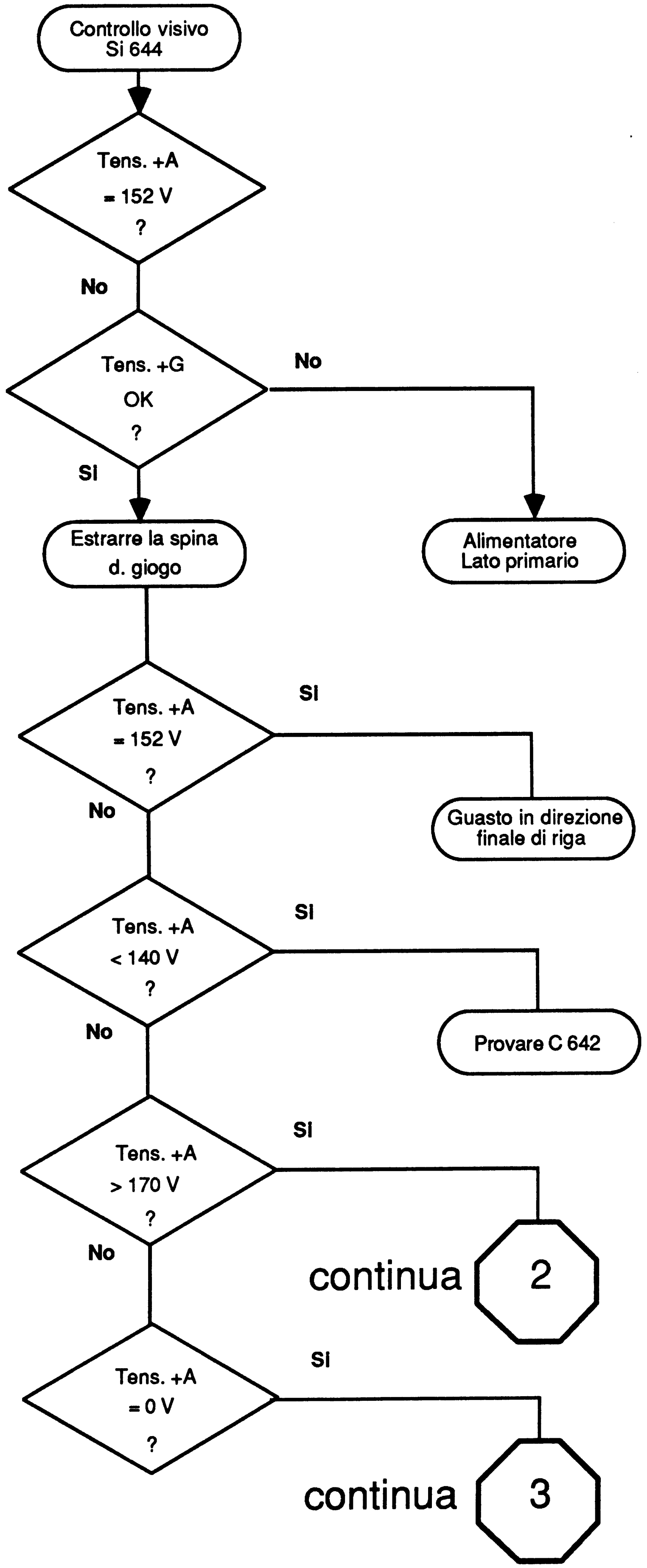
6. Mancando l'alta tensione e quindi la tensione +C, può verificarsi anche un'interruzione del circuito di regolazione dell'alimentatore. In questo caso la tensione +E misura solo 6,5 V - 7 V anzichè 8 V. Poichè la tensione di alimentazione minima per il pilota di riga TDA 8140 è di 7 V, questo stadio viene disattivato appena viene oltrepassata in meno la soglia di tensione.

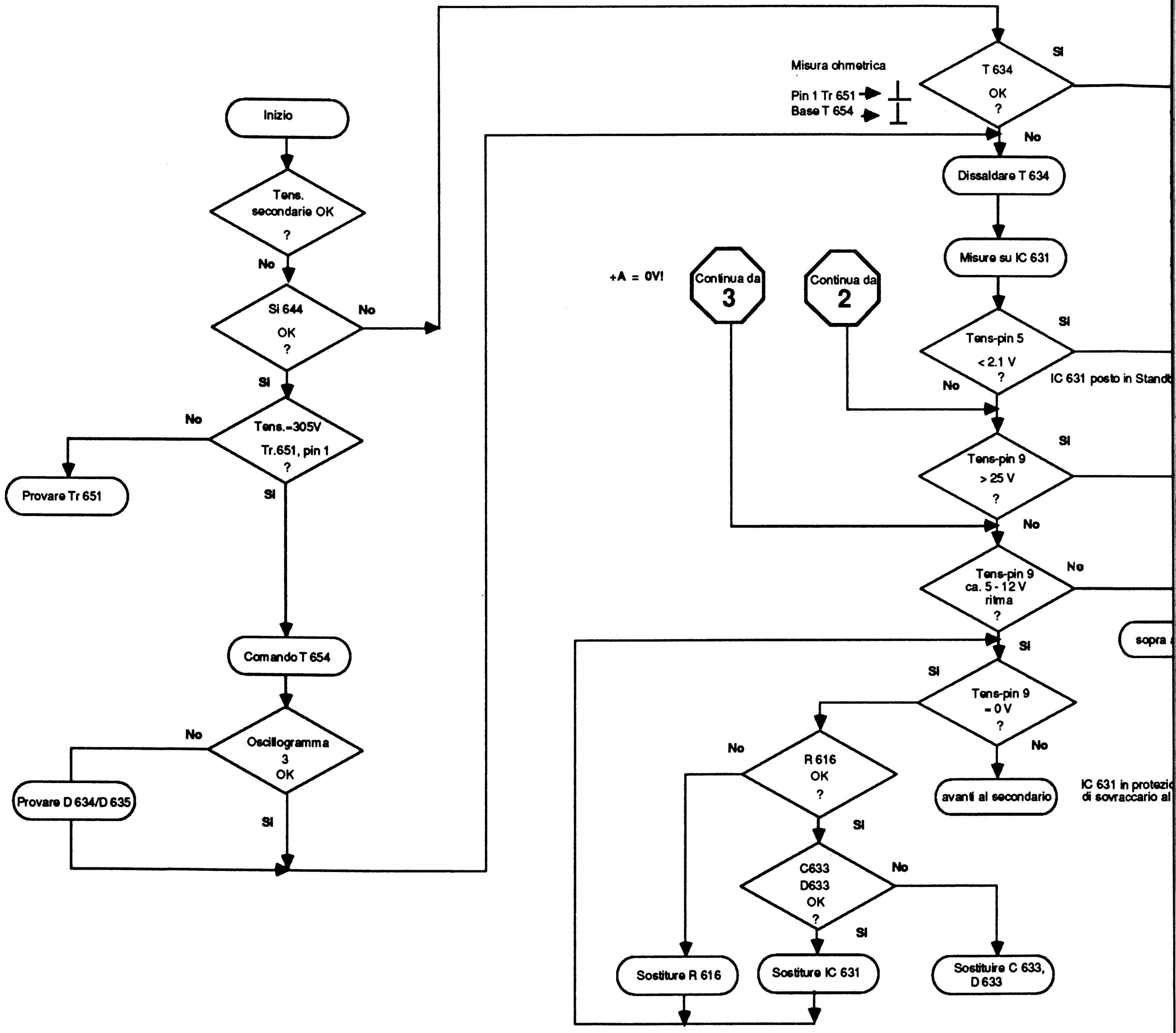
7. Se l'apparecchio rimane in Stand-by, occorre misurare la tensione al pin 5 di IC 631. Se essa risulta inferiore a 2,1 V (U pin 5 ≤ U rif / 2 - 0,1 V), l'apparecchio non si scosta dalla situazione di proptezione stand-by. Se la tensione è presente, il difetto è allora da ricercarsi nel modulo sintonia.

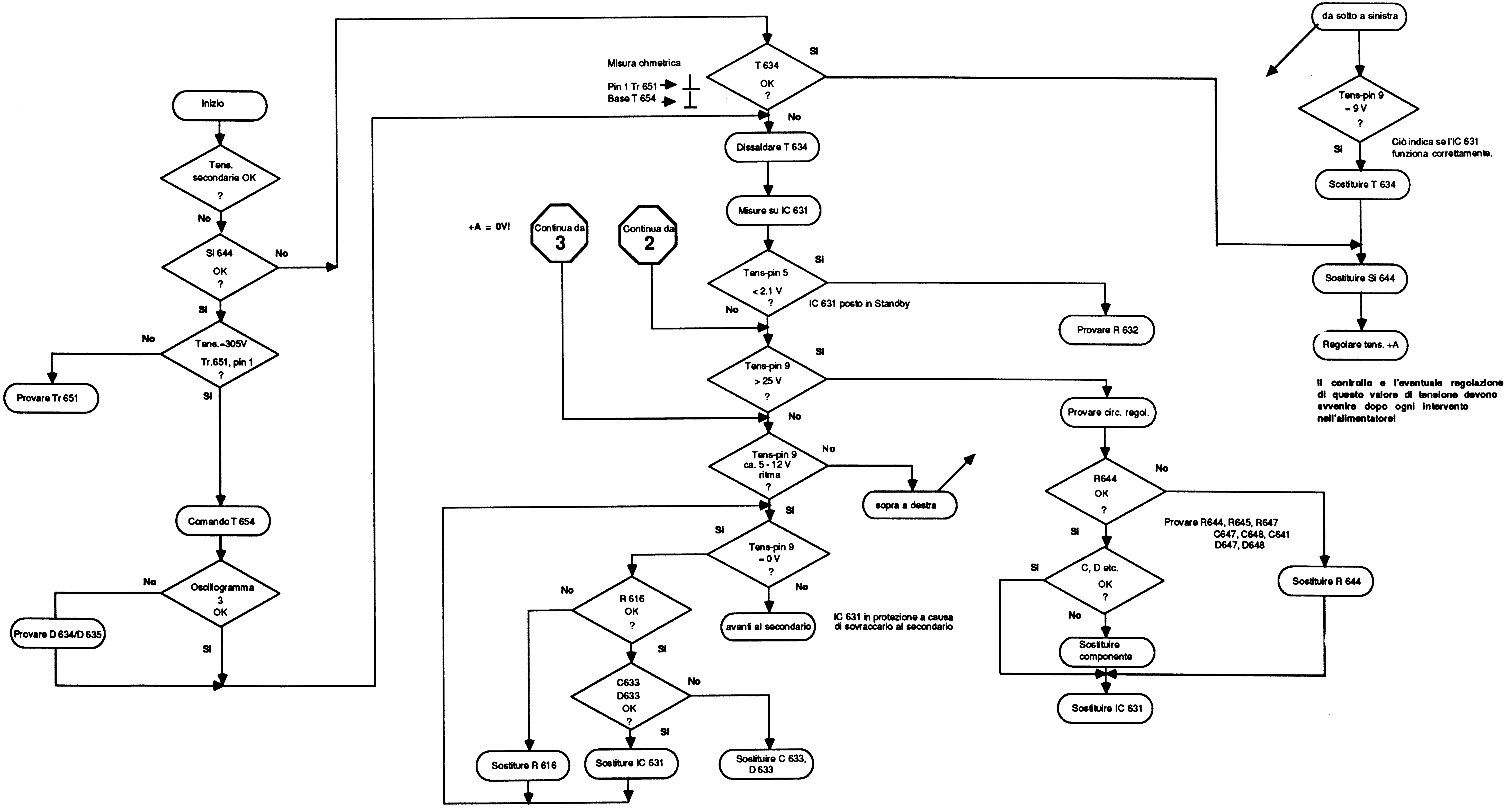
Diagramma Ricerca Guasti

ne +C, può verificarsi
regolazione dell'-
E misura solo 6,5 V -
alimentazione minima
questo stadio viene
n meno la soglia di

occorre misurare la
a inferiore a 2,1 V (U
non si scosta dalla
tensione è presente,
onia.


Controllo visivo
Si 644
Tens. +A
= 152 V
?
No
Tens. +G
OK
?
No
SI
Estrarre la spina
d. giogo
Alimentatore
Lato primario
Tens. +A
= 152 V
?
SI
No
Guasto in direzione
finale di riga
Tens. +A
< 140 V
?
SI
No
Provare C 642
Tens. +A
> 170 V
?
SI
No
continua
2
Tens. +A
= 0 V
?
SI
continua
3


Inizio
Tens.
secondarie OK
?
No
Si 644
OK
?
No
SI
Tens.=305V
Tr.651, pin 1
?
No
Provare Tr 651
SI
Comando T 654
Oscillogramma
3
OK
No
Provare D 634/D 635
SI
Misura ohmetrica
Pin 1 Tr 651
Base T 654
T 634
OK
?
SI
No
Dissaldare T 634
Misure su IC 631
+A = 0V!
Continua da
3
Continua da
2
Tens-pin 5
< 2.1 V
?
SI
No
IC 631 posto in Standb
Tens-pin 9
> 25 V
?
SI
No
Tens-pin 9
ca. 5 - 12 V
ritma
?
No
SI
sopra
SI
Tens-pin 9
= 0 V
?
No
avanti al secondario
IC 631 in protezi
di sovraccario al
No
R 616
OK
?
SI
C633
D633
OK
?
No
SI
Sostiture R 616
Sostiture IC 631
Sostituire C 633,
D 633


Inizio
Tens. secondarie OK ?
No
Si 644 OK ?
No
Si
Tens.=305V Tr.651, pin 1 ?
No
Provare Tr 651
Si
Comando T 654
Oscillogramma 3 OK
No
Provare D 634/D 635
Si
Misura ohmetrica
Pin 1 Tr 651
Base T 654
T 634 OK ?
Si
No
Dissaldare T 634
Misure su IC 631
+A = 0V!
Continua da 3
Continua da 2
Tens-pin 5 < 2.1 V ?
Si
No
IC 631 posto in Standby
Provare R 632
Tens-pin 9 > 25 V ?
Si
No
Provare circ. regol.
Tens-pin 9 ca. 5 - 12 V ritma ?
No
Si
sopra a destra
Tens-pin 9 = 0 V ?
Si
No
avanti al secondario
IC 631 in protezione a causa di sovraccario al secondario
R 616 OK ?
No
Si
C633 D633 OK ?
No
Si
Sostiture R 616
Sostiture IC 631
Sostituire C 633, D 633
R644 OK ?
No
Si
Provare R644, R645, R647 C647, C648, C641 D647, D648
C, D etc. OK ?
Si
No
Sostituire componente
Sostituire R 644
Sostituire IC 631
da sotto a sinistra
Tens-pin 9 = 9 V ?
Si
Ciò indica se l'IC 631 funziona correttamente.
Sostituire T 634
Sostituire Si 644
Regolare tens. +A

Il controllo e l'eventuale regolazione di questo valore di tensione devono avvenire dopo ogni intervento nell'alimentatore!

Ⓓ

Service am I^2C-Bus

Bei Fehlfunktionen des Gerätes, die nicht auf Netzteil, Hochspannung und Ablenkung zurückzuführen sind, ist der I^2C-Bus gemäß Tabelle 1 zu prüfen, bevor weitere Servicearbeiten nach Tabelle 2 durchgeführt werden. Der µComputer in der Bedieneinheit IC 860 liefert Steuerbefehle für Tuner, ZF, Videotext und RGB-Analogwerte über den I^2C-Bus.
Hinweis:
Bei Bausteinwechsel ist das Gerät generell auszuschalten!
Auch in Stellung "Bereitschaft" darf kein Baustein gezogen werden! MOS-handling beachten.

Tabelle 1

Messung	Meßwert	Meßpunkt	Mögliche Fehler
+5 V	5 V	Pin 4/7, IC 860 Pin 3, IC 6010	D 6033, IC 6030, IC 6010
10 MHz Takt 4 MHz Takt	10 MHz, 3 Vss 4 MHz, 3 Vss	Pin 5, IC 6010 Pin 6, IC 860	F 6013 IC 860
Reset	LOW nur im Einschaltmoment	Pin 2, IC 860 Pin 28, IC 6010	T 815, D 814, IC 860 T 6011, D 6011, IC 6010
I^2C-Bus	$5 V_{ss}$	Pin 21, 23, IC 860	Die I^2C-Bus-Daten sind auch ohne TP - Bedienung oder Keyboardeingaben vorhanden. Bei fehlenden Daten: Tuner-, ZF-, Videotext- Steckkarte nacheinander ziehen bzw. IC 330 Pin 4,5 ablöten. Stellen sich trotz dieser Maßnahmen keine Daten ein ist die Bedieneinheit zu wechseln.

Tabelle 2
Mögliche Fehlerarten des Gesamterätes in Abhängigkeit der I^2C Bus-Steuerung.

Fehler	Mögliche Ursache	Meßwert	Meßpunkt
Keine Bedienfunktion per Keyboard	+ H, IC 860	5V siehe Tabelle 1	IC 860, Pin 4
Keine Kanal-Programmumschaltung mit Telepilot	IR-Vorverstärker D 1201, IC 1201,	+5 V	IC 1201, Pin 1
Display dunkel keine Anzeige	+ H	5 V	Pin 4,16 IC 860
	IC 6010	Ausgangssignale LOW	Pin 19,2 IC 6010
	IC 860	Ausgangssignale LOW ca. 3 V	an den Kathoden der LED's.
Display dunkel oder fehlerhafte Anzeige	Schluß oder Unterbrechung der CLOCK-,DATEN-und Freigabeleitung	ca. $5 V_{ss}$	IC 860,Pin 21,22,23 IC 6010, Pin 19,2
Keine Frequenzabstimung	+C über R 337	ca. 44 V	Tuner Pin 1
	+ B, + H	12 V, 5 V	Tuner Pin 16,2
	Daten (SDA)/Clock (SCL) I^2C Bus	$5 V_{ss}$	Tuner Pin 6, 5
Rauschen am Bildschirm	variable Abstimmspannung in Abghängigkeit der Kanaleingabe	0,2 - 30 V	Tuner Pin 13, 15
Bildschirm dunkel-kein Rauschen	Tuner Pin 3 HIGH	HF 0 V AV > 8 V	Tuner Pin 3
Kein FBAS - Signal an ZF - Bst. Kont. 13,10	+B, +B, +H	12 V,26 V, 5V	ZF 21, 26,22
	I^2C Bus, SDA, SCL fehlt am Tuner ZF Pin 10 HIGH	$5 V_{ss}$	Tuner 6, 5
	ZF Pin 11 HIGH		ZF Pin 11
Kein Ton	ZF Verstärker	bei voller Lautstärke ca. 1,5 Vss	ZF Pin 1,2
	Buchsenplatte nur bei Peripherie	“	Stecker AU Pin 1,3
	NF - Steckkarte	“	Stecker NF Pin 1, 3
	+ G und - G,	20 W 35 W 26 V 34 V	NF Pin 9,10; 7,8
	+ B, + B'	12 V	ZF 21
	I^2C Bus, SDA, SCL	$5 V_{ss}$	ZF 25, 24
Keine Analogwerte	I^2C Bus, IC 330	$5 V_{ss}$	IC 330 Pin 4/5 Farb RGB-Baustein:
Keine Helligkeit	D/A Converter	1-3 V	Stift 10 (Helligk.)
Kein Kontrast	D/A Converter	2-4 V	Stift 11 (Kontrast)
Kein Farbkontrast	D/A Converter	2-4 V	Stift 12 (Farbkon.)
Nur bei TP-Bedienung Kein Videotext	+ B, + E	12 V, 8 V	VT Pin 13, 2
	I^2C Bus, SDA	$5 V_{ss}$	VT Pin 9

Ⓖ

Service checks on the I^2C Bus

If faults occur in the set which cannot be attributed to the power supply unit, the
bus should be checked using Table 1 before further service work is carried usin
Via the I^2 bus the microcomputer in the control unit IC 860 supplies control sign
and the RGB analog signals.
Note:
When a module is being changed, the set should always be switched off. Modu
"standby" mode. Observe MOS handling precautions.

Table 1

Test	Measured Value	Testpoint	
+5 V	5 V	Pin 4/7, IC 860 Pin 3, IC 6010	
10 MHz Takt 4 MHz Takt	10 MHz, $3 V_{pp}$ 4 MHz, $3 V_{pp}$	Pin 5, IC 6010 Pin 6, IC 860	
Reset	LOW only at moment of switch on	Pin 2, IC 860 Pin 28, IC 6010	
I^2C-Bus	$5 V_{pp}$	Pin 21, 23, IC 860	T i I un

Table 2
Possible faults due to I^2C Bus control which can occur in any part of set.

Fault	Possible Cause	Measure
No functions accepted by keyboard	+ H, IC 860	5 see ta
Channel No. cannot be changed with remote control	IR preamplifier D 1201, IC 1201,	+5
Dark display, no indication	+ H	5
	IC 6010	Output LO
	IC 860	LOW outpu LOW
Dark display or defective display segments	Short circuit or interruption in CLOCK, DATA, and release lines	ca. 5
No frequency tuning	+C via R 337	ca. 4
	+ B, + H	12 V,
	Daten (SDA)/Clock (SCL) I^2C Bus	5 V
Noise - infested picture	Variable tuning voltage as function of channel selection	0,2 - 3
Dark screen - no noise	Tuner Pin 3 HIGH	HF AV >
No CCVS at IF module contacts 7/9	+B, +B, +H	12 V,26
	I^2C Bus, SDA, SCL missing at tuner	$5 V_{p}$
	ZF Pin 11 HIGH	

s on the I^2C Bus

n the set which cannot be attributed to the power supply unit, the EHT or the deflection system, the I^2C hecked using Table 1 before further service work is carried using Table 2.

e microcomputer in the control unit IC 860 supplies control signals for the tuner, IF, Videotext (teletext) nalog signals.

e is being changed, the set should always be switched off. Modules must not be unpluged even in the e. Observe MOS handling precautions.

	Measured Value	Testpoint	Possible Faults
	5 V	Pin 4/7, IC 860 Pin 3, IC 6010	D 6033, IC 6030, IC 6010
Takt akt	10 MHz, 3 V_{pp} 4 MHz, 3 V_{pp}	Pin 5, IC 6010 Pin 6, IC 860	F 6013 IC 860
	LOW only at moment of switch on	Pin 2, IC 860 Pin 28, IC 6010	T 815, D 814, IC 860 T 6011, D 6011, IC 6010
us	5 V_{pp}	Pin 21, 23, IC 860	The I2C Bus data are even present without input from the remote control or keyboard. If there are no data: Take out the tuner, IF, Videotext plug-in boards successively or unsolder Pins 4,5 of IC 330. IF there are still no data replace the control unit.

s due to I^2C Bus control which can occur in any part of set.

ault	Possible Cause	Measured Value	Test Point
ons accepted eyboard	+ H, IC 860	5V see table 1	IC 860, Pin 4
o. cannot be remote control	IR preamplifier D 1201, IC 1201,	+5 V	IC 1201, Pin 1
isplay, no ication	+ H	5 V	Pins 4,16 IC 860
	IC 6010	Output signals LOW	Pins 19,2, IC 6010
	IC 860	LOW output signals LOW 3 V	on the cathodes of the LEDs
ay or defective segments	Short circuit or interruption in CLOCK, DATA, and release lines	ca. 5 V_{pp}	IC 860,Pins 21,22,23 IC 6010, Pins 19,2
ency tuning	+C via R 337	ca. 44 V	Tuner Pin 1
	+ B, + H	12 V, 5 V	Tuner Pins16,2
	Daten (SDA)/Clock (SCL) I^2C Bus	5 V_{pp}	Tuner Pins 6, 5
- infested cture	Variable tuning voltage as function of channel selection	0,2 - 30 V	Tuner Pins 13, 15
en - no noise	Tuner Pin 3 HIGH	HF 0 V AV > 8 V	Tuner Pin 3
at IF module acts 7/9	+B, +B, +H	12 V,26 V, 5V	ZF 21, 26,22
	I^2C Bus, SDA, SCL missing at tuner	5 V_{pp}	Tuner Pins 6, 5
	ZF Pin 11 HIGH		ZF Pin 11
No sound	IF amplifier	approx. 1,5 Vpp at max. Volume	IF, Pins 1,2
	Socket board only by Peripherie	"	AV plug, Pins 1,3
	AF plug-in board	"	AF plug, Pins 1,3
	+G and -G	20 W 35 W 26 V 34 V	AF Pins 9,10,7,8
	+ B	12 V	IF, Pin 21
	I^2C Bus, SDA, SCL	5 V_{pp}	IF Pins 25, 24
No analog signals,	I^2C bus, IC 330	5 V_{pp}	IC 330, Pin 4/5 Colour/RGB module:
Brightnes Contrast Colour contrast	D/A Converter D/A Converter D/A Converter	1-3 V 2-4 V 2-4 V	Pin 10 (brightness) Pin 11 (contrast) Pin 12 (col. contrast)
Only in case of remote contr.	+ B, + E	12 V, 8 V	VT, Pins 13, 2
No Videotext (teletext)	I^2C Bus, SDA	5 Vpp	VT, Pin 9

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Servizio per I2C Bus

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, nè all'alta tensione o alla deflessio di tutto il sistema I^2C Bus secondo la tabella 1 e successivamente effettuare i lavori riportati in tabella 2 Il microcomputer dell'unità comandi IC 860 fornisce istruzioni o tuner, FI, Televideo e piastra prese (Eu del sistema I^2C Bus; inoltre provvede al telecomando VCT e ai valori analogici RGB.

Avviso:

Mentre si sostituisce un modulo, làpparecchio va spento!

Non estrarre il modulo nemmeno quando l'apparecchio si trova in posizione d'attesa! Prestare attenzio

Tabella 1

Misura	Valore di misura	Punto di misura	Possibili
+5 V	5 V	Pin 4/7, IC 860 Pin 3, IC 6010	D 6033, IC 603
Cadenza 10 MHz Cadenza 4 MHz	10 MHz, 3 V_{pp} 4 MHz, 3 V_{pp}	Pin 5, IC 6010 Pin 6, IC 860	F 601 IC 86
Reset	LOW solo all'atto dell'accensione	Pin 2, IC 860 Pin 28,IC 6010	T 815, D 81 T 6011, D 601
I^2C-Bus	5 V_{pp}	Pin 21, 23, IC 860	I dati nel sistema I^2C Bus senza immissione median dati mancano: staccare u schede tuner, FI e Televid i pin 4 e 5 di IC 330. Se malgrado ciò i dati non sostiure l'unita comandi.

Tabella 2

Possibili guasti dell'apparecchio dipendenti dal sistema I^2C Bus.

Guasto	Possibile Causa	Valore di misura	P
Le funzioni immesse con tastiera non vengono accettate	+ H, IC 860	5V vedi tabella 1	
Non viene commutato da canale a programma mediante TP	Preamplif. ad infrarossi D 1201,IC 1201	+5 V	
Display oscuro Non appaiono indicazioni	+ H	5 V	
	IC 6010	Segnali d'uscita LOW	
	IC 860	Segnali d'uscita LOW ca. 3 V	
Display oscuro oppure errori indicazione	CLOCK interrotto o in corto; linea dati e di consenso	ca. 5 V_{pp}	IC
La frequenza non viene sintonizzata	+C mediante R 337	ca. 44 V	
	+ B, + H	12 V, 5 V	
	Dati (SDA)/Clock (SCL) I^2C Bus	5 Vpp	
Rumore sullo schermo	Tensione di sintonia variabile in funzione dell'immissione di canale	0,2 - 30 V	
Schermo oscuro il rumore non è presente	Tuner Pin 3 HIGH	HF 0 V AV > 8 V	
Manca il segnale FBAS sul mod. FI cont. 13, 10	+B, +B, +H	12 V,26 V, 5V	
	I^2C Bus, SDA, SCL manca nel tuner, ZF Pin 11 HIGH	5 Vpp	
	ZF Pin 11 HIGH		

	approx. 1,5 Vpp at max. Volume	IF, Pins 1,2
l e	“	AV plug, Pins 1,3
d	“	AF plug, Pins 1,3
	20 W 35 W 26 V 34 V	AF Pins 9,10,7,8
	12 V	IF, Pin 21
CL	5 V_{pp}	IF Pins 25, 24
	5 V_{pp} 1-3 V 2-4 V 2-4 V	IC 330, Pin 4/5 Colour/RGB module: Pin 10 (brightness) Pin 11 (contrast) Pin 12 (col. contrast)
	12 V, 8 V	VT, Pins 13, 2
	5 Vpp	VT, Pin 9

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Servizio per I2C Bus

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, nè all'alta tensione o alla deflessione, controllare prima di tutto il sistema I^2C Bus secondo la tabella 1 e successivamente effettuare i lavori riportati in tabella 2.
Il microcomputer dell'unità comandi IC 860 fornisce istruzioni o tuner, FI, Televideo e piastra prese (Euro-Scart) per mezzo del sistema I^2C Bus; inoltre provvede al telecomando VCT e ai valori analogici RGB.

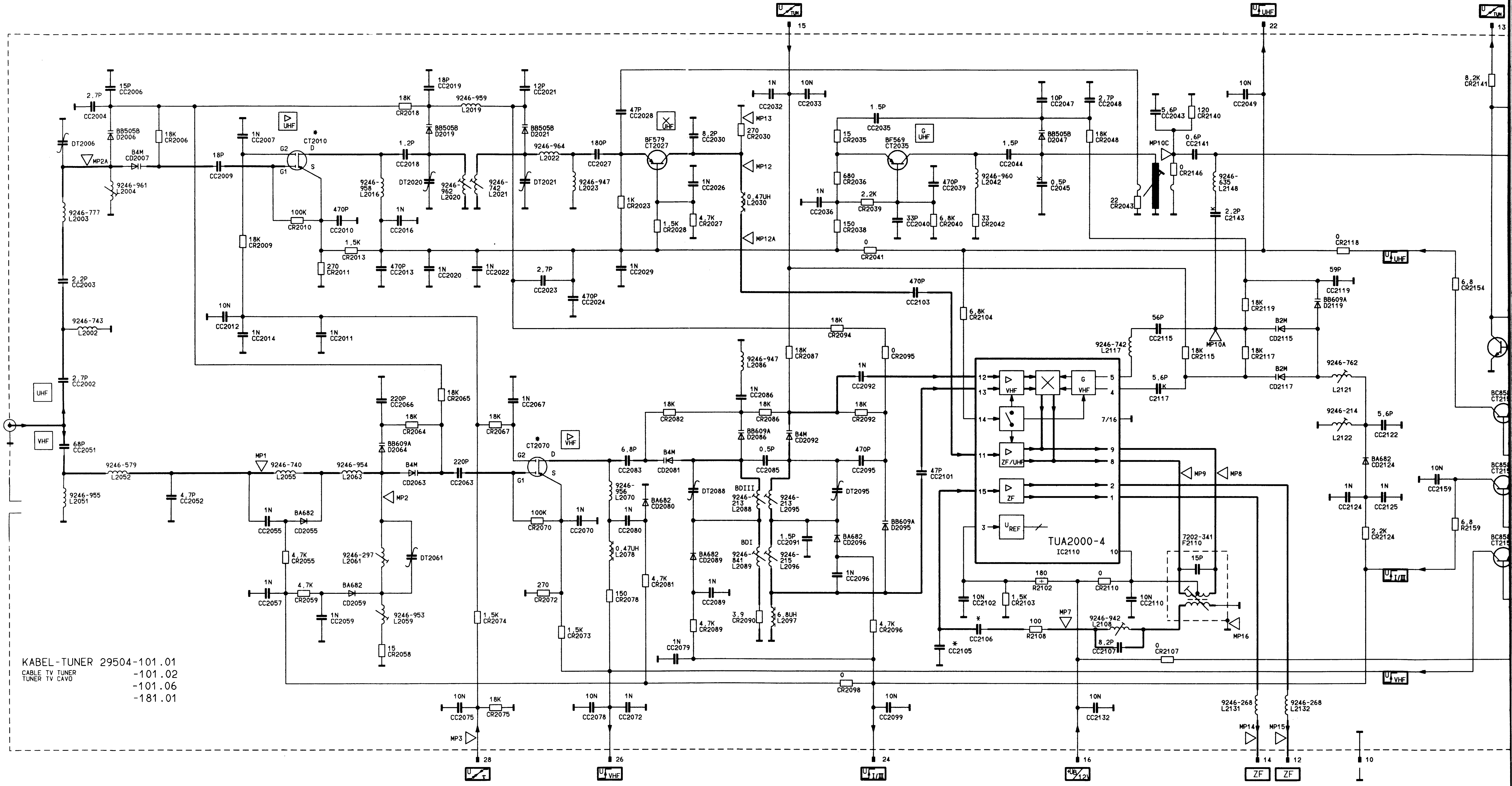
Avviso:
Mentre si sostituisce un modulo, làpparecchio va spento!
Non estrarre il modulo nemmeno quando l'apparecchio si trova in posizione d'attesa! Prestare attenzione alle norme MOS.

Tabella 1

Misura	Valore di misura	Punto di misura	Possibili guasti
+5 V	5 V	Pin 4/7, IC 860 Pin 3, IC 6010	D 6033, IC 6030, IC 6010
Cadenza 10 MHz Cadenza 4 MHz	10 MHz, 3 V_{pp} 4 MHz, 3 V_{pp}	Pin 5, IC 6010 Pin 6, IC 860	F 6013 IC 860
Reset	LOW solo all'atto dell'accensione	Pin 2, IC 860 Pin 28,IC 6010	T 815, D 814, IC 860 T 6011, D 6011, IC 6010
I^2C-Bus	5 V_{pp}	Pin 21, 23, IC 860	I dati nel sistema I^2C Bus sono presenti anche senza immissione mediante TP o tastiera. Se i dati mancano: staccare una dopo l'altra le schede tuner, FI e Televideo risp. te dissaldare i pin 4 e 5 di IC 330. Se malgrado ciò i dati non sono presenti: sostiure l'unita comandi.

Tabella 2
Possibili guasti dell'apparecchio dipendenti dal sistema I^2C Bus.

Guasto	Possibile Causa	Valore di misura	Punto di misura
Le funzioni immesse con tastiera non vengono accettate	+ H, IC 860	5V vedi tabella 1	IC 860, pin 4
Non viene commutato da canale a programma mediante TP	Preamplif. ad infrarossi D 1201,IC 1201	+5 V	IC 1201, pin 1
Display oscuro Non appaiono indicazioni	+ H	5 V	pin 4,16 IC 860
	IC 6010	Segnali d'uscita LOW	pin 19,2 IC 6010
	IC 860	Segnali d'uscita LOW ca. 3 V	Ai catodi dei LED
Display oscuro oppure errori indicazione	CLOCK interrotto o in corto; linea dati e di consenso	ca. 5 V_{pp}	IC 860, pin 21,22,23 IC 6010, pin 19,2
La frequenza non viene sintonizzata	+C mediante R 337	ca. 44 V	Tuner pin 1
	+ B, + H	12 V, 5 V	Tuner pin 16,2
	Dati (SDA)/Clock (SCL) I^2C Bus	5 Vpp	Tuner pin 6, 5
Rumore sullo schermo	Tensione di sintonia variabile in funzione dell'immissione di canale	0,2 - 30 V	Tuner pin 13, 15
Schermo oscuro il rumore non è presente	Tuner Pin 3 HIGH	HF 0 V AV > 8 V	Tuner pin 3
Manca il segnale FBAS sul mod. FI cont. 13, 10	+B, +B, +H	12 V,26 V, 5V	IF 21, 26,22
	I^2C Bus, SDA, SCL manca nel tuner, ZF Pin 11 HIGH	5 Vpp	Tuner pin 6, 5
	ZF Pin 11 HIGH		IFpin 11
Manca l'audio	Amplificatore FI	a massimo volume ca. 1,5 V_{pp}	FI pin 1,2
	sulo con apparecchio esterno	“	Spina AV pin 6, 8
	Piastra prese	“	Spina BF pin 1, 3
	+ G und - G, und + B	20 W 35 W 26 V 34 V	BF pin 9,10; 7,8;
	+ B, + B'	12 V	IF 21
	I^2C Bus, SDA, SCL	5 V pp	IF 25, 24
Mancano i valori analogici Manca la luminosità Manca il contrasto Manca il contr. colore	I^2C Bus, IC 330 Convertitore D/A Convertitore D/A Concertitore D/A	5 V pp 1-3 V 2-4 V 2-4 V	IC 330 pin 4/5 Modulo colore/RGB: spinotto 10 (luminisitoà) spinotto 11 (contrasto) spinotto 12 (contr. colore)
Solo con l'uso del TP Le funzioni Televideo non vengono accettate	+ B, + E	12 V, 8 V	VT pin 13, 2
	I^2C Bus, SDA	5 Vpp	VT pin 9



KABEL-TUNER 29504-101.01
CABLE TV TUNER
TUNER TV CAVO
-101.02
-101.06
-181.01

UHF
VHF
TUA2000-4
IC2110
BF579
CT2027
BF569
CT2035
CT2010
CT2070
G1
G2
D
S
VHF
ZF/UHF
ZF
G
U_REF
15
22
13
28
26
24
16
14
12
10
ZF
ZF
U_TUN
U_UHF
U_VHF
U_I/III
+U_B 12V
U_T
MP1
MP2
MP2A
MP3
MP7
MP8
MP9
MP10A
MP10C
MP12
MP12A
MP13
MP14
MP15
MP16
9246-777 L2003
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9246-955 L2051
9246-579 L2052
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9246-961 L2004
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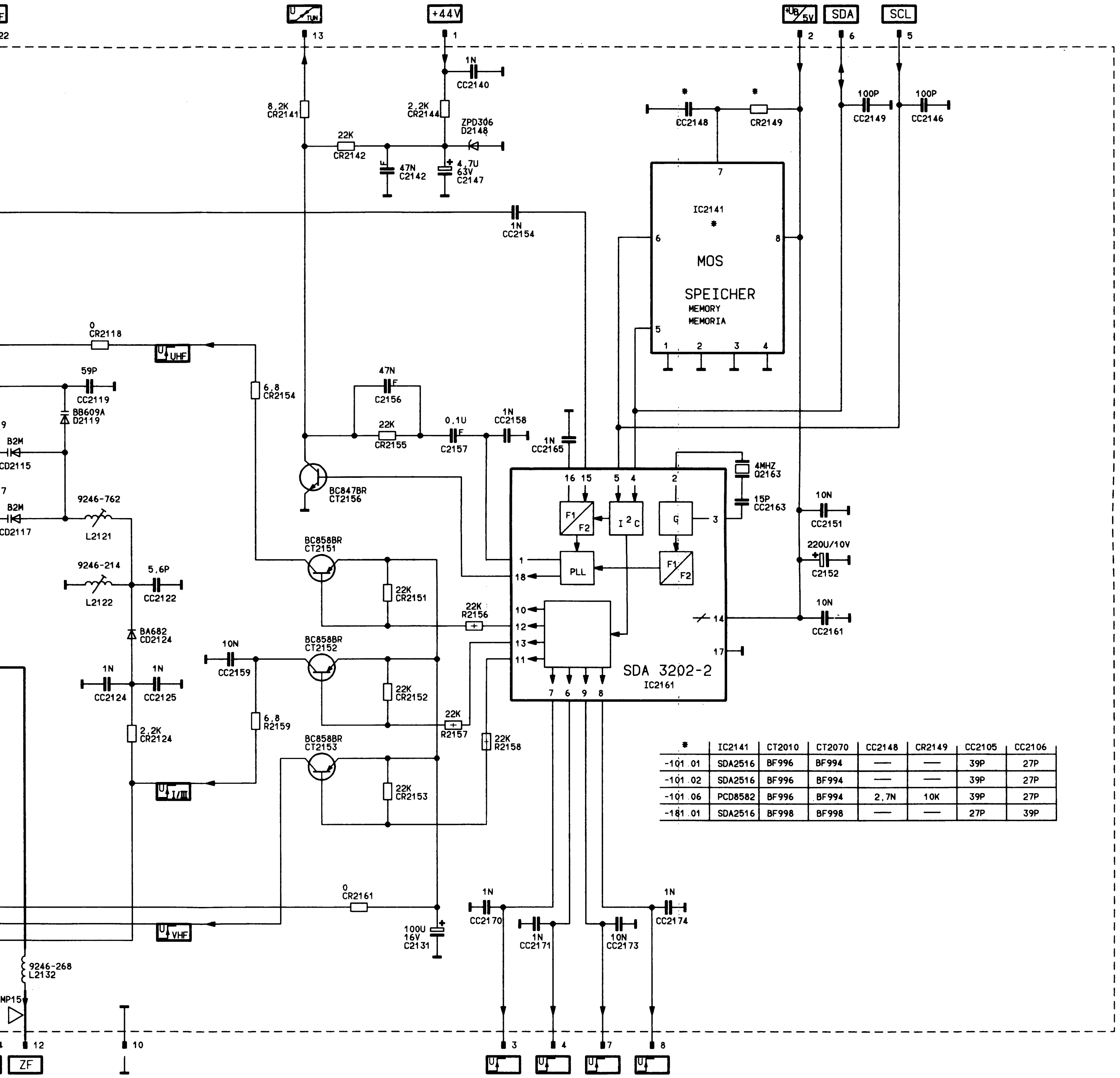
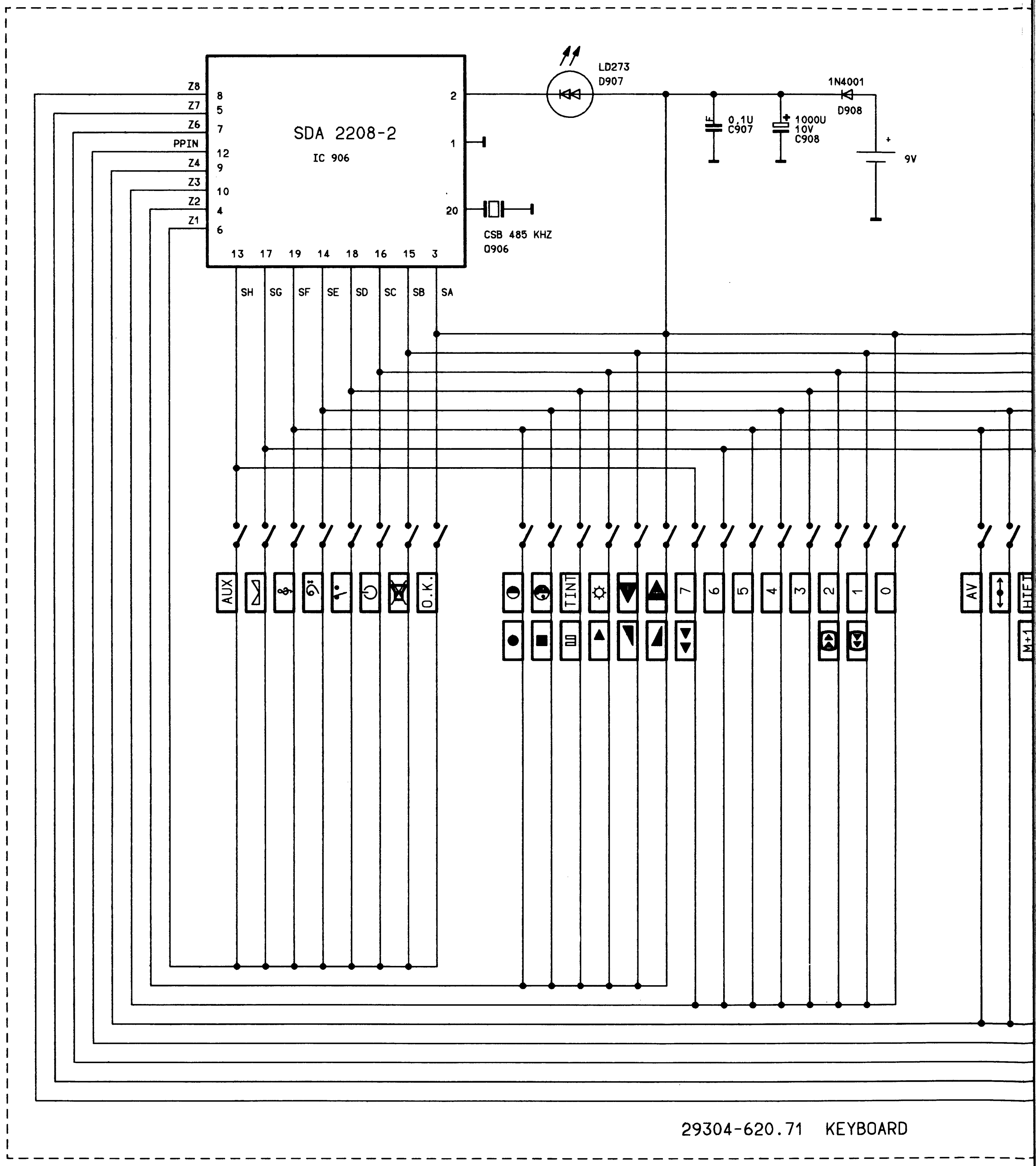
9246-214 L2122
9246-942 L2108
9246-268 L2131
9246-268 L2132
7202-341 F2110
BB505B D2006
BB505B D2019
BB505B D2021
BB505B D2047
BB609A D2064
BB609A D2086
BB609A D2095
BB609A D2119
BA682 CD2055
BA682 CD2059
BA682 CD2080
BA682 CD2089
BA682 CD2096
BA682 CD2124
B4M CD2007
B4M CD2063
B4M CD2081
B4M CD2092
B2M CD2115
B2M CD2117
BDIII
BDI
DT2006
DT2020
DT2021
DT2061
DT2088
DT2095

Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto


+44V
SDA
SCL
UB/5V
U TUN
CC2140
CR2141
CR2144
ZPD306
D2148
CR2142
C2142
C2147
CC2148
CR2149
CC2149
CC2146
IC2141
MOS
SPEICHER
MEMORY
MEMORIA
CC2154
CR2118
UHF
CC2119
BB609A
D2119
CD2115
CD2117
9246-762
L2121
9246-214
L2122
CC2122
BA682
CD2124
CC2124
CC2125
CR2124
CR2154
C2156
CR2155
C2157
CC2158
CC2165
BC847BR
CT2156
BC858BR
CT2151
CR2151
R2156
BC858BR
CT2152
CC2159
R2159
CR2152
R2157
R2158
BC858BR
CT2153
CR2153
I/III
VHF
CR2161
C2131
9246-268
L2132
ZF
4MHZ
Q2163
CC2163
CC2151
C2152
CC2161
PLL
I²C
SDA 3202-2
IC2161
CC2170
CC2171
CC2173
CC2174

*	IC2141	CT2010	CT2070	CC2148	CR2149	CC2105	CC2106
-101 .01	SDA2516	BF996	BF994	—	—	39P	27P
-101 .02	SDA2516	BF996	BF994	—	—	39P	27P
-101 .06	PCD8582	BF996	BF994	2,7N	10K	39P	27P
-181 .01	SDA2516	BF998	BF998	—	—	27P	39P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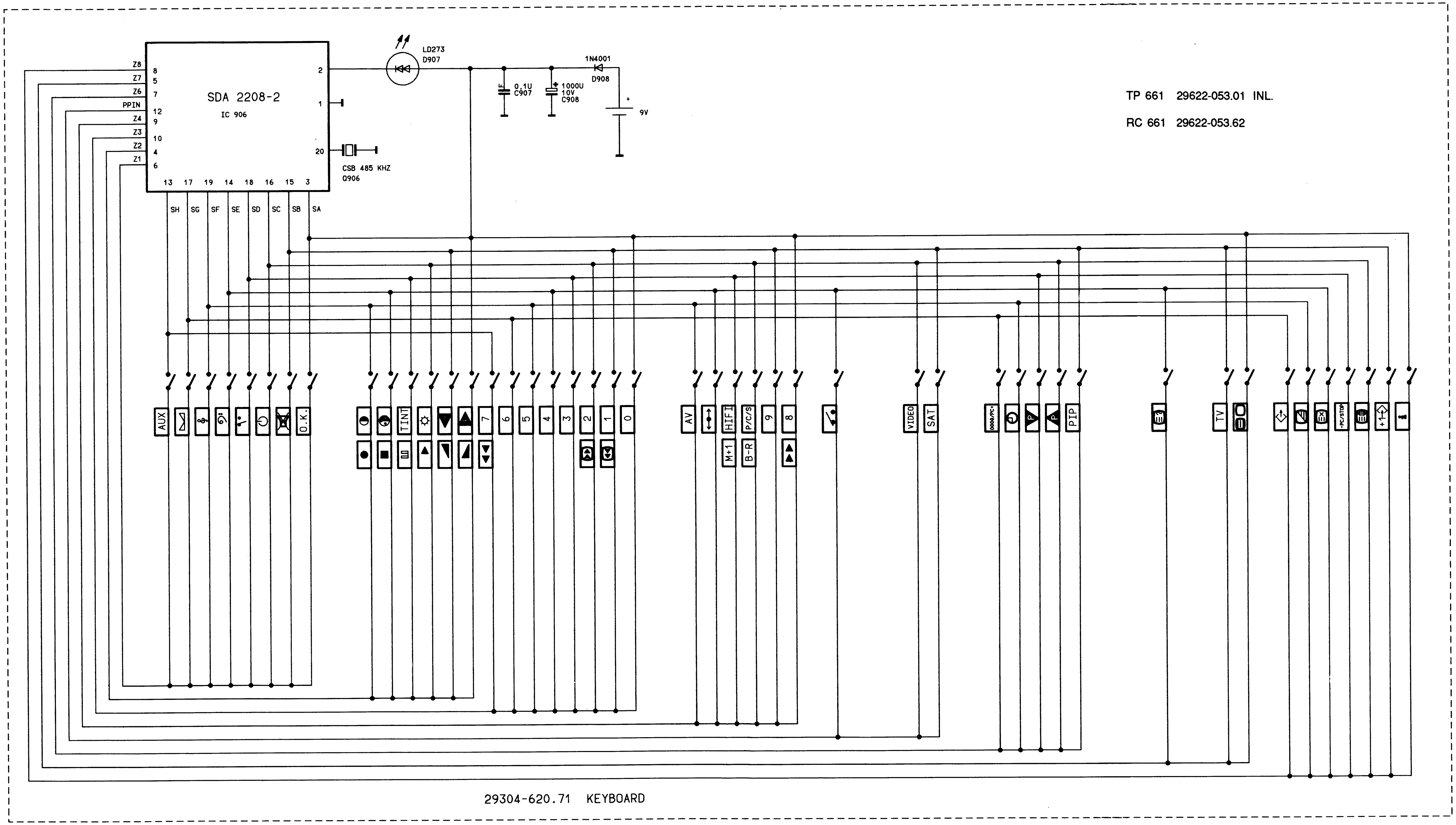
IC 906
Z8
Z7
Z6
PPIN
Z4
Z3
Z2
Z1
SH
SG
SF
SE
SD
SC
SB
SA
LD273
D907
1N4001
D908
C907
C908
9V
CSB 485 KHZ
Q906
AUX
TINT
O.K.
AV
M+1

29304-620.71 KEYBOARD

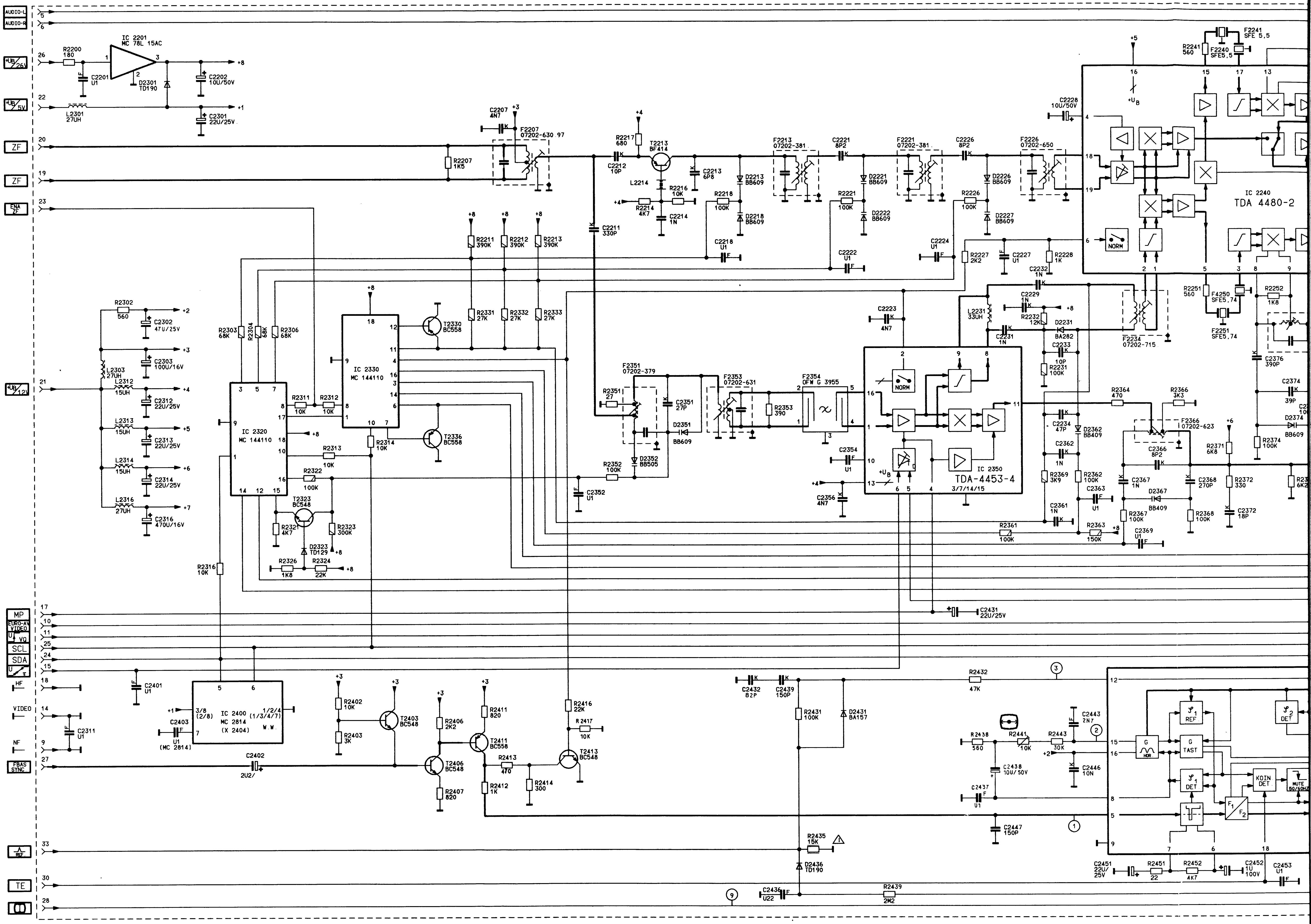
CC2106
27P
27P
27P
39P

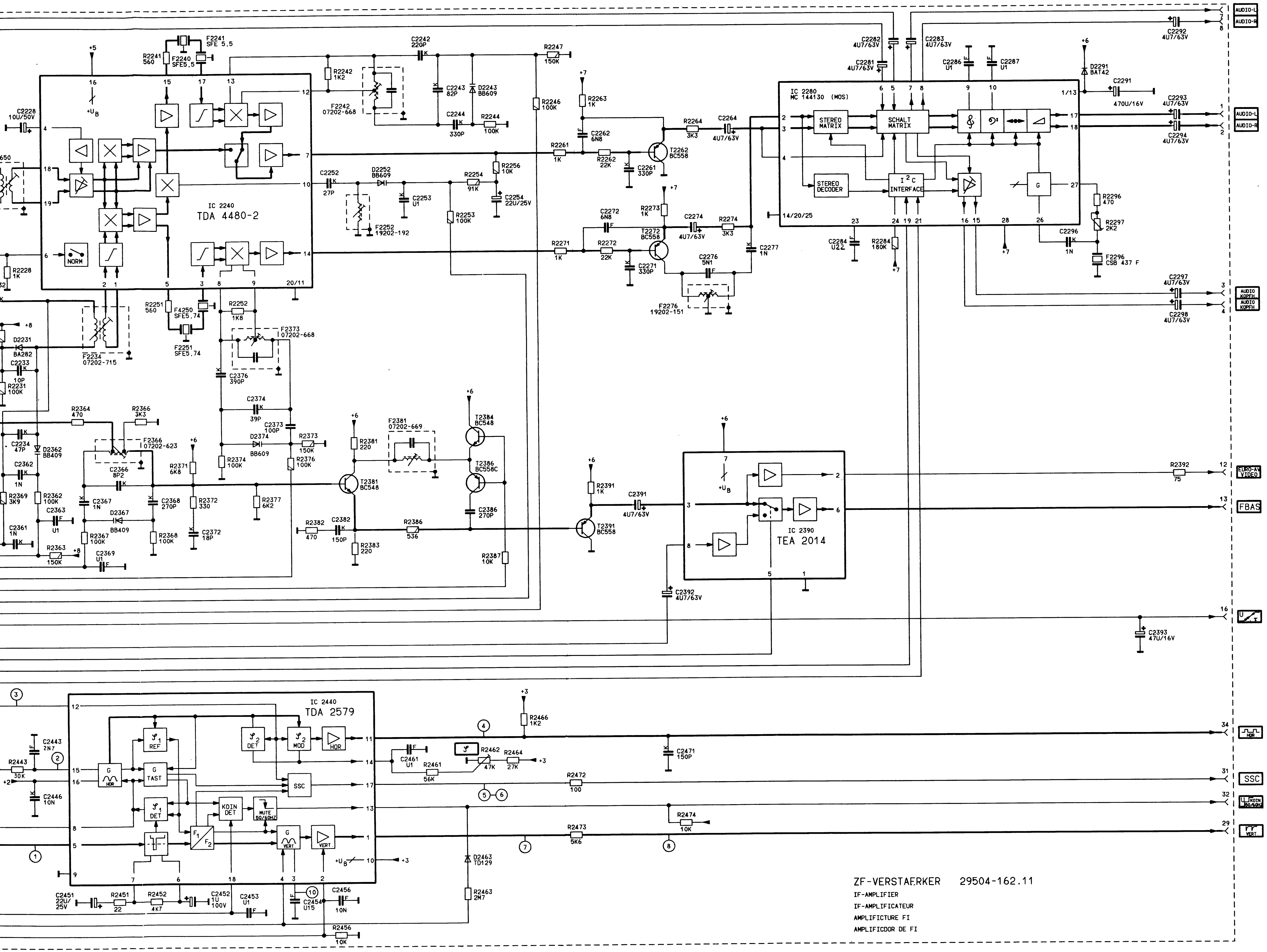

SDA 2208-2
IC 906
Z8
Z7
Z6
PPIN
Z4
Z3
Z2
Z1
8
5
7
12
9
10
4
6
2
1
20
13
17
19
14
18
16
15
3
SH
SG
SF
SE
SD
SC
SB
SA
LD273
D907
1N4001
D908
0,1U
C907
1000U
10V
C908
+
9V
CSB 485 KHZ
Q906
AUX
O.K.
TINT
7
6
5
4
3
2
1
0
AV
HIFI
P/C/S
9
8
M+1
B-R
VIDEO
SAT
PIP
TV

TP 661 29622-053.01 INL.

RC 661 29622-053.62

29304-620.71 KEYBOARD


AUDIO-L
AUDIO-R
+UB 26V
+UB 5V
ZF
ZF
ENA ZF
+UB 12V
MP
EURO-AV VIDEO
U VQ
SCL
SDA
U
HF
VIDEO
NF
FBAS SYNC
TE
IC 2201 MC 78L 15AC
R2200 180
C2201 U1
D2301 TD190
C2202 10U/50V
L2301 27UH
C2301 22U/25V
C2207 4N7
F2207 07202-630 97
R2207 1K5
R2217 680
T2213 BF414
C2212 10P
L2214
R2214 4K7
R2216 10K
C2214 1N
C2213 6P8
C2211 330P
F2213 07202-381
D2213 BB609
D2218 BB609
R2218 100K
C2218 U1
C2221 8P2
F2221 07202-381
D2221 BB609
D2222 BB609
R2221 100K
C2222 U1
C2226 8P2
F2226 07202-650
D2226 BB609
D2227 BB609
R2226 100K
C2224 U1
R2227 2K2
C2227 U1
R2228 1K
C2228 10U/50V
IC 2240 TDA 4480-2
NORM
R2241 560
F2241 SFE 5,5
F2240 SFE5,5
R2251 560
F4250 SFE5,74
F2251 SFE5,74
R2252 1K8
C2232 1N
C2229 1N
R2232 12K
D2231 BA282
L2231 33UH
C2231 1N
C2233 10P
R2231 100K
F2234 07202-715
C2223 4N7
R2211 390K
R2212 390K
R2213 390K
R2331 27K
R2332 27K
R2333 27K
IC 2330 MC 144110
T2330 BC558
T2336 BC558
R2314 10K
IC 2320 MC 144110
R2311 10K
R2312 10K
R2313 10K
R2322 100K
T2323 BC548
R2321 4K7
R2323 300K
D2323 TD129
R2326 1K8
R2324 22K
R2303 68K
R2304 68K
R2306 68K
R2316 10K
R2302 560
C2302 47U/25V
C2303 100U/16V
L2303 27UH
L2312 15UH
C2312 22U/25V
L2313 15UH
C2313 22U/25V
L2314 15UH
C2314 22U/25V
L2316 27UH
C2316 470U/16V
F2351 07202-379
R2351 27
C2351 27P
D2351 BB609
D2352 BB505
R2352 100K
C2352 U1
F2353 07202-631
R2353 390
F2354 OFW G 3955
IC 2350 TDA-4453-4
C2354 U1
C2356 4N7
C2234 47P
D2362 BB409
C2362 1N
R2369 3K9
R2362 100K
C2363 U1
C2361 1N
R2361 100K
R2363 150K
C2369 U1
R2364 470
R2366 3K3
F2366 07202-623
C2366 8P2
C2367 1N
D2367 BB409
R2367 100K
C2368 270P
R2368 100K
R2371 6K8
R2372 330
C2372 18P
C2376 390P
C2374 39P
D2374 BB609
R2374 100K
C2431 22U/25V
C2401 U1
IC 2400 MC 2814 (X 2404)
C2403 U1 (MC 2814)
C2402 2U2/
C2311 U1
R2402 10K
R2403 3K
T2403 BC548
R2406 2K2
T2406 BC548
R2407 820
R2411 820
T2411 BC558
R2413 470
R2412 1K
R2414 300
R2416 22K
R 2417 10K
T2413 BC548
C2432 82P
C2439 150P
R2431 100K
D2431 BA157
R2432 47K
R2438 560
R2441 10K
R2443 30K
C2443 2N7
C2446 10N
C2438 10U/50V
C2437 U1
C2447 150P
R2435 15K
D2436 TD190
C2436 U22
R2439 2M2
REF
DET
TASD
KOIN DET
MUTE 50/60HZ
C2451 22U/25V
R2451 22
R2452 4K7
C2452 1U 100V
C2453 U1


IC 2240
TDA 4480-2
NORM
F2241 SFE 5,5
F2240 SFE5,5
R2241 560
C2228 10U/50V
R2228 1K
F2234 07202-715
D2231 BA282
C2233 10P
R2231 100K
C2242 220P
R2242 1K2
F2242 07202-668
C2243 82P
D2243 BB609
C2244 330P
R2244 100K
R2247 150K
R2246 100K
C2252 27P
D2252 BB609
C2253 U1
F2252 19202-192
R2254 91K
R2256 10K
C2254 22U/25V
R2253 100K
R2251 560
F4250 SFE5,74
F2251 SFE5,74
R2252 1K8
F2373 07202-668
C2376 390P
C2374 39P
C2373 100P
D2374 BB609
R2373 150K
R2374 100K
R2376 100K
R2364 470
R2366 3K3
F2366 07202-623
C2366 8P2
C2234 47P
D2362 BB409
C2362 1N
R2369 3K9
R2362 100K
C2363 U1
C2361 1N
R2363 150K
C2367 1N
D2367 BB409
R2367 100K
C2369 U1
R2371 6K8
R2372 330
C2368 270P
R2368 100K
C2372 18P
R2377 6K2
R2381 220
F2381 07202-669
T2384 BC548
T2386 BC558C
T2381 BC548
C2386 270P
R2382 470
C2382 150P
R2386 536
R2383 220
R2387 10K
R2263 1K
C2262 6N8
R2261 1K
R2262 22K
C2261 330P
T2262 BC558
R2264 3K3
C2264 4U7/63V
R2273 1K
C2272 6N8
R2271 1K
R2272 22K
C2271 330P
T2272 BC558
C2274 4U7/63V
R2274 3K3
C2277 1N
C2276 5N1
F2276 19202-151
IC 2280
MC 144130 (MOS)
STEREO MATRIX
SCHALT MATRIX
STEREO DECODER
I²C INTERFACE
G
C2282 4U7/63V
C2281 4U7/63V
C2283 4U7/63V
C2286 U1
C2287 U1
D2291 BAT42
C2291 470U/16V
C2292 4U7/63V
C2293 4U7/63V
C2294 4U7/63V
R2296 470
R2297 2K2
C2296 1N
F2296 CSB 437 F
C2284 U22
R2284 180K
C2297 4U7/63V
C2298 4U7/63V
AUDIO-L
AUDIO-R
AUDIO KOPFH
IC 2390
TEA 2014
R2391 1K
C2391 4U7/63V
T2391 BC558
C2392 4U7/63V
R2392 75
EURO-AV VIDEO
FBAS
C2393 47U/16V
IC 2440
TDA 2579
REF
DET
MOD
HOR
TAST
SSC
KOIN DET
MUTE 50/60HZ
VERT
C2443 2N7
R2443 30K
C2446 10N
C2451 22U/25V
R2451 22
R2452 4K7
C2452 1U 100V
C2453 U1
C2454 U15
C2456 10N
R2456 10K
R2466 1K2
C2461 U1
R2461 56K
R2462 47K
R2464 27K
C2471 150P
R2472 100
R2473 5K6
R2474 10K
D2463 TD129
R2463 2M7
SSC
KOIN 50/60Hz
HOR
VERT

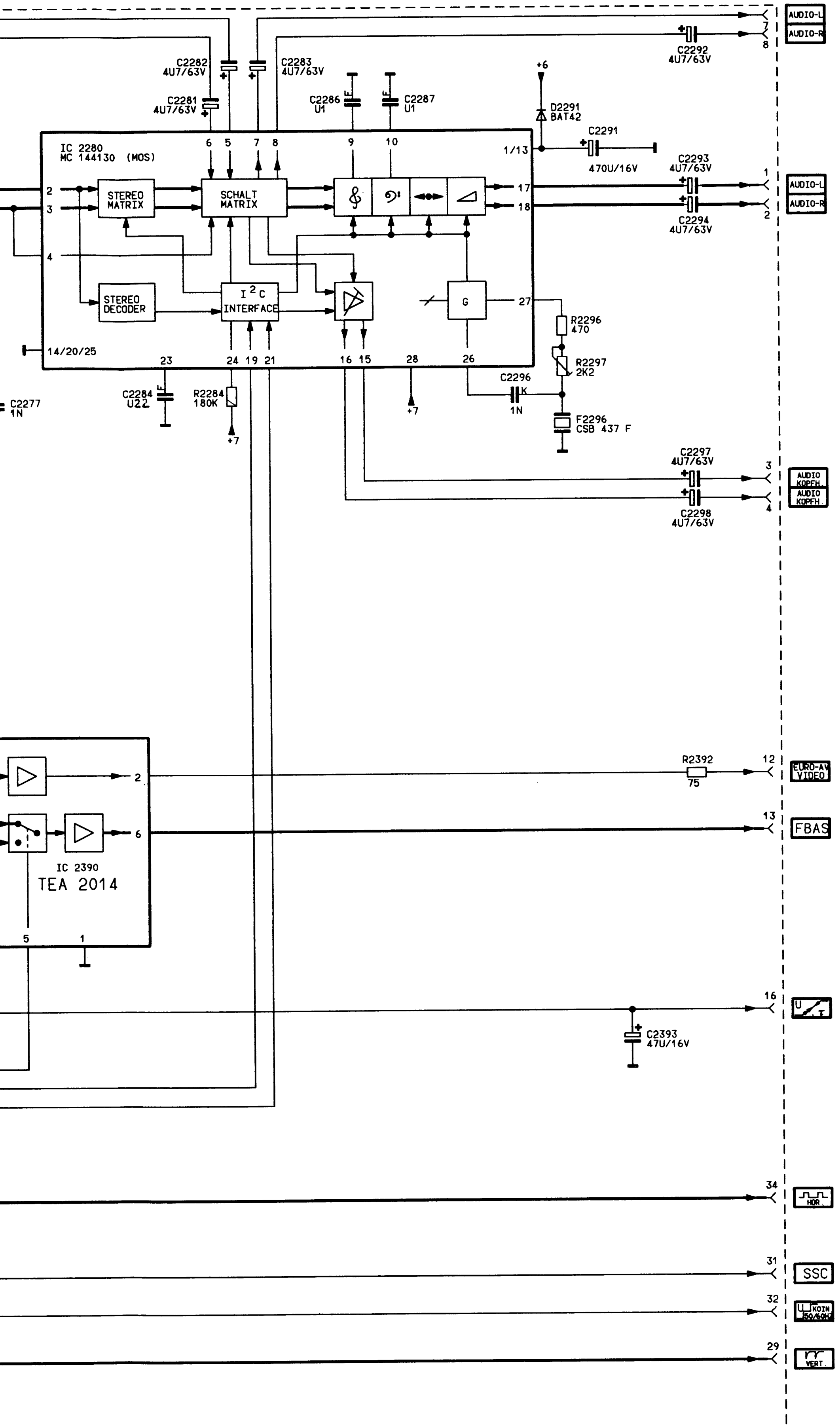
ZF-VERSTAERKER 29504-162.11

IF-AMPLIFIER

IF-AMPLIFICATEUR

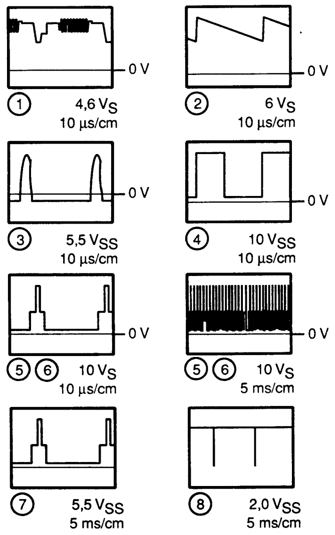
AMPLIFICTURE FI

AMPLIFICDOR DE FI


AUDIO-L
AUDIO-R
C2282
4U7/63V
C2283
4U7/63V
C2281
4U7/63V
C2286
U1
C2287
U1
+6
D2291
BAT42
C2291
470U/16V
C2292
4U7/63V
C2293
4U7/63V
C2294
4U7/63V
IC 2280
MC 144130 (MOS)
STEREO MATRIX
SCHALT MATRIX
STEREO DECODER
I²C INTERFACE
G
14/20/25
R2296
470
R2297
2K2
C2296
1N
F2296
CSB 437 F
C2284
U22
R2284
180K
+7
C2277
1N
C2297
4U7/63V
C2298
4U7/63V
AUDIO KOPFH.
AUDIO KOPFH.
R2392
75
EURO-AV VIDEO
FBAS
IC 2390
TEA 2014
C2393
47U/16V
U
HOR.
SSC
KOIN 50/60HZ
VERT.

ZF-VERSTAERKER 29504-162.11
IF-AMPLIFIER
IF-AMPLIFICATEUR
AMPLIFICTURE FI
AMPLIFICDOR DE FI

ZEILENSYNCHRONI-SATION



D

ABGLEICH DER ZEILENFREQUENZ UND -PHASE

Zeilenfrequenz:

1. Pin 5, IC 2440 (TDA 2579) nach Masse kurzschließen.
2. Mit Einstellregler R 2441 Bild auf langsames Durchlaufen einstellen.
3. Kurschluß entfernen.

ZeilenPhase:

1. Den Bildbreitenregler R 7002 auf Minimum stellen.
2. Mit dem Einstellregler R 2462 den grauen Bildrand symmetrisch zum rechten und linken Bildraster einstellen.
3. Den Bildbreitenregler wieder nach Testbild einstellen.

GB

ADJUSTMENT OF LINE FREQUENCY AND PHASE

Line Frequency:

1. Short circuit Pin 5, IC 2441 (TDA 2579) to chassis.
2. With the adjustment control R 2441, adjust so that the picture runs through slowly.
3. Remove the short circuit.

Line Phase:

1. Set the picture width control R 7002 to minimum.
2. With the adjustment control R 2462, set the grey picture edges to be symmetrical within the right and left picture frame.
3. Reset the picture width control to conform with the test pattern.

I

TARATURA DELLA FREQUENZA DI RIGA E DELLA FASE

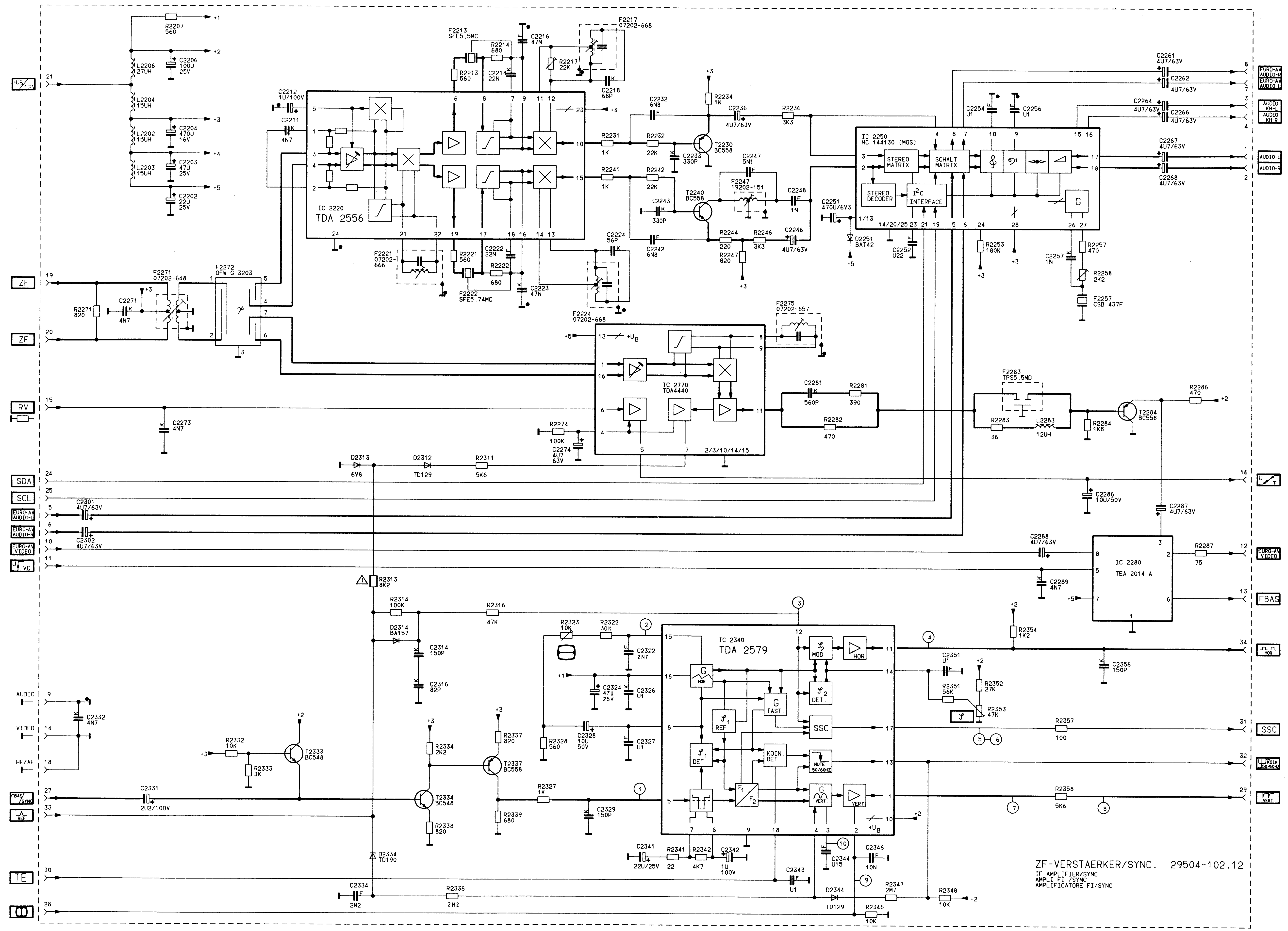
Frequenza di riga:

1. Cortocircuitare verso massa il pin 5, IC 2441 (TDA 2579).
2 Regolare R 2441 finchè l'immagine scorre lentamente.
3. Togliere il cortocircuito.

Fase:

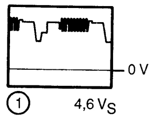
1. Regolare al minimo il regolatore di larghezza R 7002.
2. Con R 2462 regolare il bordo grigio dell'immagine simmetricamente al raster d'immagine a destra e a sinistra.
3. Regolare nuovamente in base al monoscopio il regolatore di larghezza.

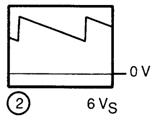
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto

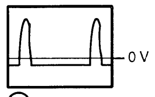

IC 2220
TDA 2556
IC 2250
MC 144130 (MOS)
STEREO MATRIX
SCHALT MATRIX
STEREO DECODER
I²C INTERFACE
IC 2770
TDA4440
IC 2280
TEA 2014 A
IC 2340
TDA 2579
T2230 BC558
T2240 BC558
T2284 BC558
T2333 BC548
T2334 BC548
T2337 BC558
F2213 SFE5,5MC
F2217 07202-668
F2221 07202-666
F2222 SFE5,74MC
F2224 07202-668
F2247 19202-151
F2271 07202-648
F2272 OFW G 3203
F2275 07202-657
F2283 TPS5,5MD
F2257 CSB 437F
ZF
ZF
RV
SDA
SCL
EURO-AV AUDIO-L
EURO-AV AUDIO-R
EURO-AV VIDEO
AUDIO
VIDEO
HF/AF
TE
FBAS
SSC
HOR
VERT
AUDIO-L
AUDIO-R
AUDIO KH-L
AUDIO KH-R
MOD
DET
TAST
REF
KOIN DET
MUTE 50/60HZ
SSC

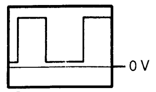
ZF-VERSTAERKER/SYNC. 29504-102.12

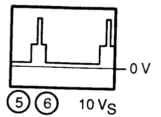
IF AMPLIFIER/SYNC
AMPLI FI /SYNC
AMPLIFICATORE FI/SYNC

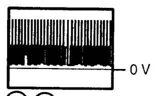

① 4,6 V_S 10 µs/cm

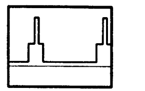

② 6 V_S 10 µs/cm

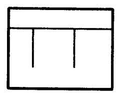

③ 5,5 V_{SS} 10 µs/cm

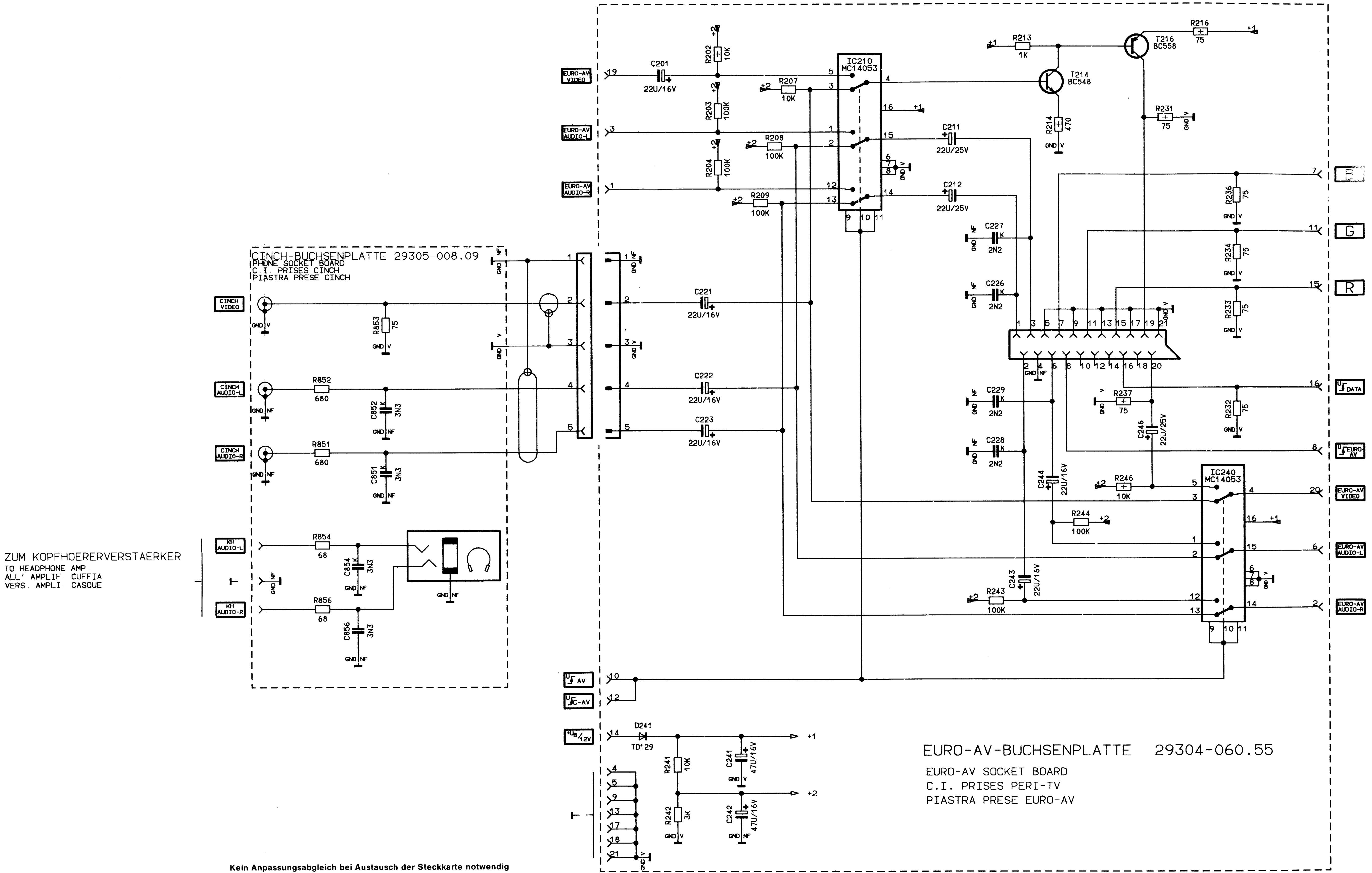

④ 10 V_{SS} 10 µs/cm


⑤⑥ 10 V_S 10 µs/cm

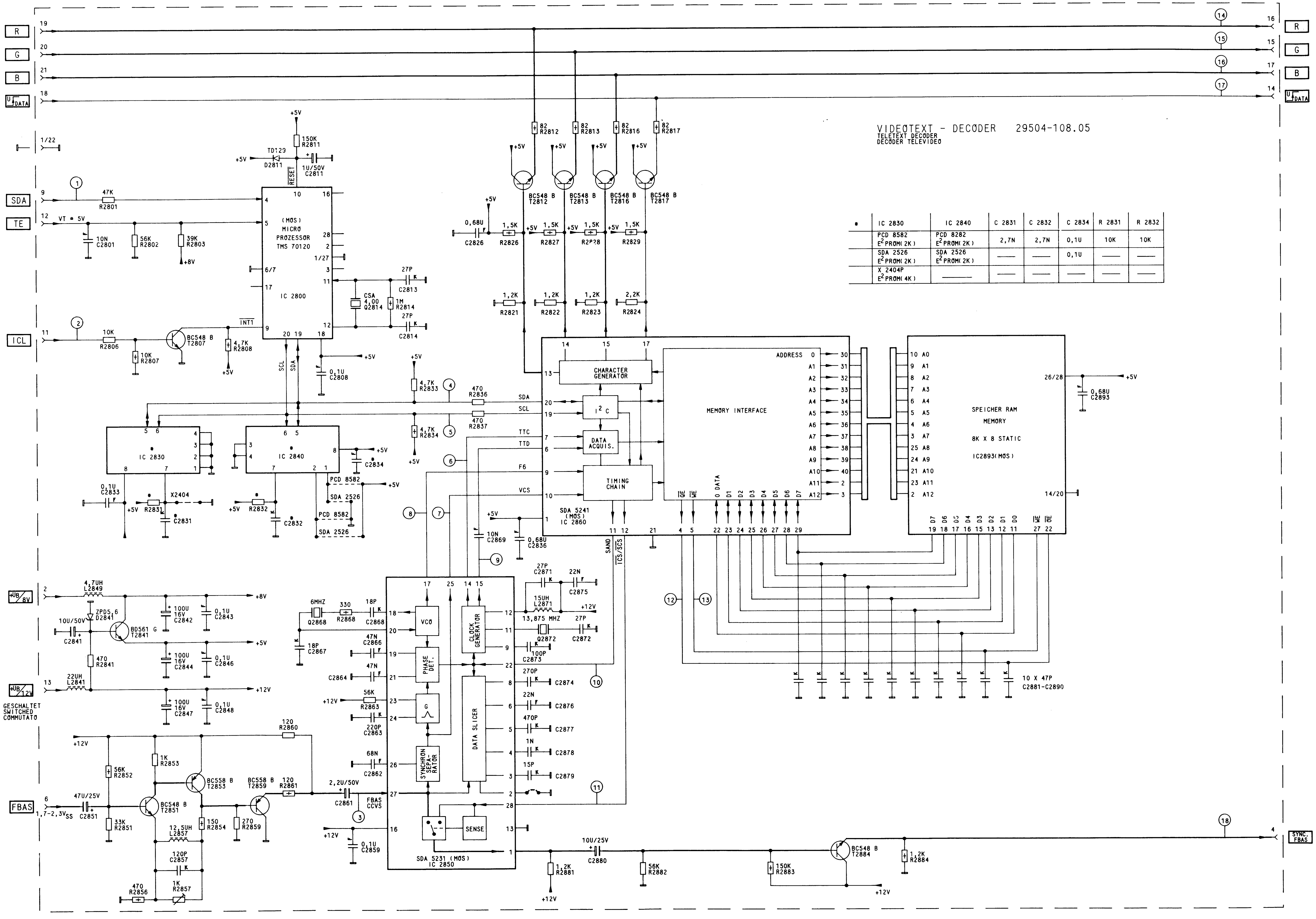

⑤⑥ 10 V_S 5 ms/cm


⑦ 5,5 V_{SS} 5 ms/cm


⑧ 2,0 V_{SS} 5 ms/cm


EURO-AV-BUCHSENPLATTE 29304-060.55
EURO-AV SOCKET BOARD
C.I. PRISES PERI-TV
PIASTRA PRESE EURO-AV
CINCH-BUCHSENPLATTE 29305-008.09
PHONE SOCKET BOARD
C.I. PRISES CINCH
PIASTRA PRESE CINCH
ZUM KOPFHOERERVERSTAERKER
TO HEADPHONE AMP
ALL' AMPLIF. CUFFIA
VERS. AMPLI. CASQUE
IC210 MC14053
IC240 MC14053
T214 BC548
T216 BC558
R213 1K
R214 470
R216 75
R231 75
R202 10K
R203 100K
R204 100K
R207 10K
R208 100K
R209 100K
C201 22U/16V
C211 22U/25V
C212 22U/25V
C221 22U/16V
C222 22U/16V
C223 22U/16V
C226 2N2
C227 2N2
C228 2N2
C229 2N2
C243 22U/16V
C244 22U/16V
C246 22U/25V
R232 75
R233 75
R234 75
R236 75
R237 75
R243 100K
R244 100K
R246 10K
R851 680
R852 680
R853 75
R854 68
R856 68
C851 3N3
C852 3N3
C854 3N3
C856 3N3
D241 TD129
R241 10K
R242 3K
C241 47U/16V
C242 47U/16V
EURO-AV VIDEO
EURO-AV AUDIO-L
EURO-AV AUDIO-R
CINCH VIDEO
CINCH AUDIO-L
CINCH AUDIO-R
KH AUDIO-L
KH AUDIO-R
G
R
DATA
+UB/12V
+1
+2
GND

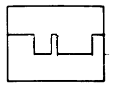
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto


R
G
B
U DATA
SDA
TE
ICL
UB 8V
UB 12V
GESCHALTET
SWITCHED
COMMUTATO
FBAS
1,7-2,3VSS
SYNC. FBAS
IC 2800
(MOS)
MICRO
PROZESSOR
TMS 70120
IC 2830
IC 2840
PCD 8582
SDA 2526
X2404
SDA 5241
(MOS)
IC 2860
CHARACTER GENERATOR
I2C
DATA ACQUIS.
TIMING CHAIN
MEMORY INTERFACE
ADDRESS
SPEICHER RAM
MEMORY
8K X 8 STATIC
IC2893(MOS)
SDA 5231 (MOS)
IC 2850
VCO
PHASE DET.
CLOCK GENERATOR
DATA SLICER
SYNCHRON SEPARATOR
SENSE
BC548 B T2812
BC548 B T2813
BC548 B T2816
BC548 B T2817
BC548 B T2807
BD561 G T2841
BC548 B T2851
BC558 B T2853
BC558 B T2859
BC548 B T2884
10 X 47P
C2881-C2890
6MHZ
13,875 MHZ
CSA 4,00 Q2814
SDA
SCL
TTC
TTD
F6
VCS
SAND
TCS/SCS
RESET
INT1
+5V
+8V
+12V

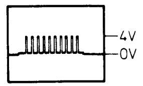
VIDEOTEXT - DECODER 29504-108.05

TELETEXT DECODER
DECODER TELEVIDEO

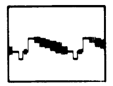
*	IC 2830	IC 2840	C 2831	C 2832	C 2834	R 2831	R 2832
	PCD 8582 E^2PROM(2K)	PCD 8282 E^2PROM(2K)	2,7N	2,7N	0,1U	10K	10K
	SDA 2526 E^2PROM(2K)	SDA 2526 E^2PROM(2K)	——	——	0,1U	——	——
	X 2404P E^2PROM(4K)	——	——	——	——	——	——



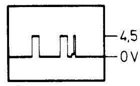
① BITFOLGE JE NACH TASTENDRUCK (BILD TASTE 1)
100 µsec/cm



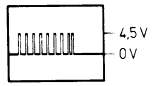
② ICL-TV-10BIT CLOC
100 µsec/cm



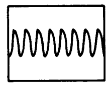
③ FBAS DC +4V
AC 1,5 V_{SS}
10 µsec/cm



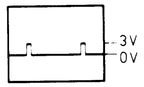
④ 100 µsec/cm



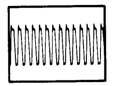
⑤ 100 µsec/cm



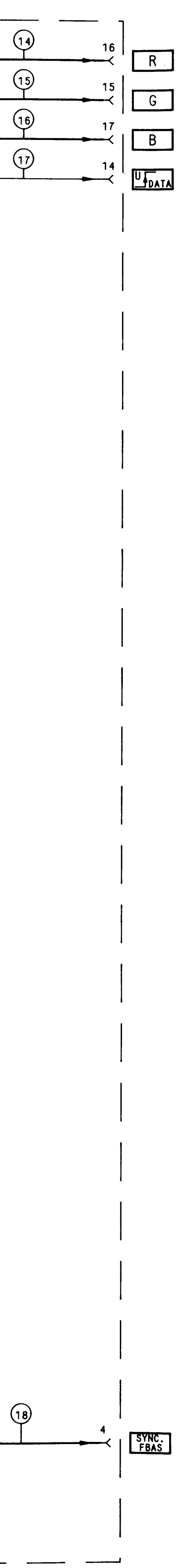
⑥ DC +4V/AC 3V_{SS}
6,9 MHz
100 nsec/cm



⑦ 10 µsec/cm



⑧ DC +6V/AC 2V_{SS}
6 MHz
200 nsec/cm


14
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R
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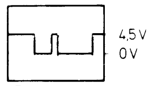
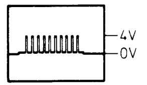
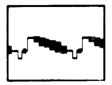
U DATA
18
4
SYNC. FBAS

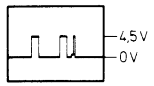


① BITFOLGE JE NACH TASTENDRUCK (BILD TASTE 1) 100 µsec/cm

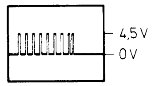


② ICL-TV-10 BIT CLOCK 100 µsec/cm

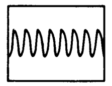

③ FBAS DC +4 V AC 1,5 V_{SS} 10 µsec/cm

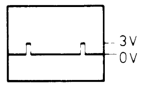


④ 100 µsec/cm

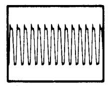


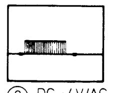
⑤ 100 µsec/cm

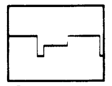

⑥ DC +4 V/AC 3 V_{SS} 6,9 MHz 100 nsec/cm

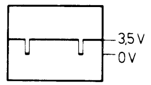


⑦ 10 µsec/cm

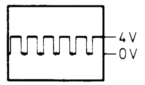

⑧ DC +6 V/AC 2 V_{SS} 6 MHz 200 nsec/cm


⑨ DC +4 V/AC 3 V_{SS} 10 µsec/cm

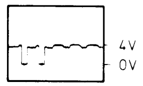

⑩ DC +3 V/AC 4,5 V_{SS} 10 µsec/cm



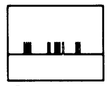
⑪ BEI TV +8 V (BILD VT) 10 µsec/cm

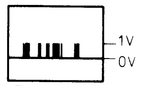


⑫ 500 nsec/cm

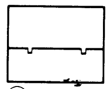


⑬ 500 nsec/cm


⑭ ⑮ ⑯ DC +1,2 V AC 0,7 V_{SS} ± 3 dB 5 µsec/cm



⑰ TV 0V / VT +1V (BILD MIX) 5 µsec/cm


⑱ SYNC VT DC +2 V AC 0,4 V_{SS} 10 µsec/cm

VT-Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videotext-Steckkarte muß die Videotext-Steckerplatte entfernt werden.

Der Einsteller R 2857 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2857 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

VT (GB: Teletext) instalation and matching adjustment

When fitting the Videotext (GB: Teletext) plug-in board, the Videotext plug plate has to be removed.

The control R 2857 is set in the fully anti clockwise position when the unit is delivered (smallest treble boost: approx. 2 dB). If, with a perfect aerial signal character faults occur, turn R 2857 slowly clockwise until the faults disappear. Do not turn R 2875 up any further as error rate may increase again.

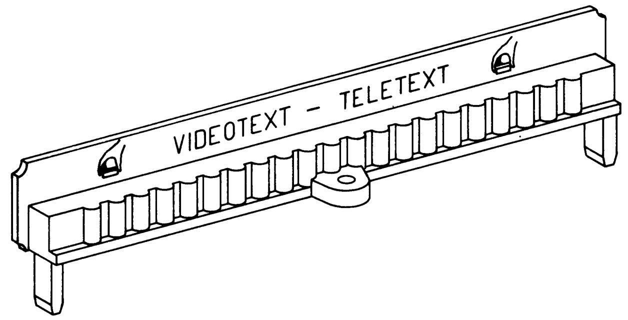
Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

Montaggio e taratura d'addatamento della scheda ad innesto

Nel montare la scheda televideo togliere la piastrina televideo.

Il regolatore R 2857 viene fornito col cursore girato completamente all'estrema sinistra (minima esaltazione delle alte frequenze, ca. 2 dB). Se si manifestano errori di carattere, nonostante un perfetto segnale d'antenna, girare lentamente il cursore di R 2857 verso destra fino ad eliminare gli errori. Non girarlo oltre può riaumentare la presenza degli errori.

Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.


VIDEOTEXT – TELETEXT

D

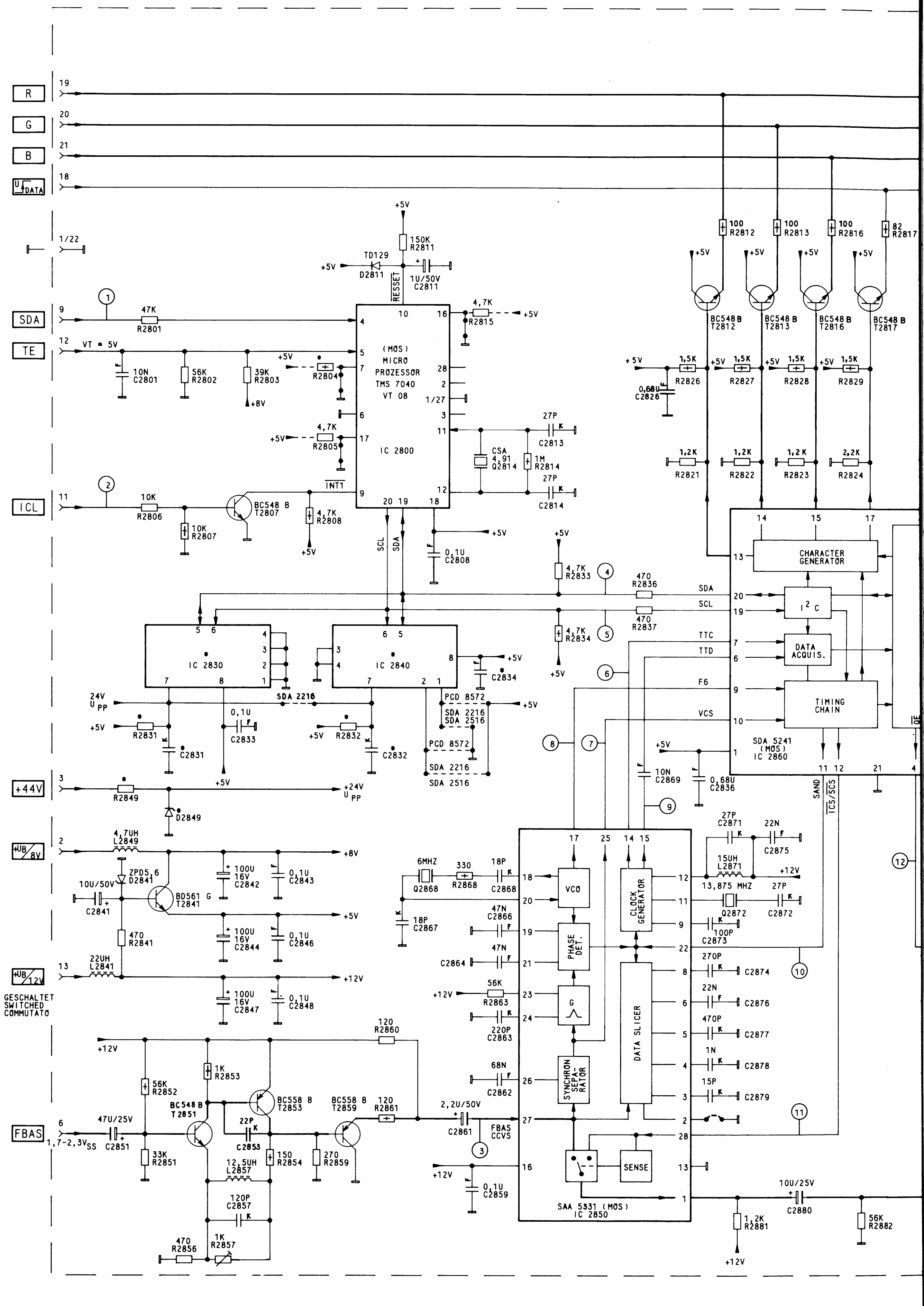
Oszilogramme und Abgleichtext sind für beide Steckkarten gültig.

GB

Oszillograms and alignment instructions are suitable for both VT modules.

I

Gli oscillogrammi ed il testo di taratura sono validi per ambedue le schede ad innesto.


R
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U DATA
19
20
21
18
1/22
SDA
TE
ICL
+44V
UB 8V
UB 12V
GESCHALTET SWITCHED COMMUTATO
FBAS
9
12
11
3
2
13
6
VT = 5V
1,7-2,3V_{SS}
47K R2801
10N C2801
56K R2802
39K R2803
R2804
+5V
+8V
4,7K R2805
10K R2806
10K R2807
BC548 B T2807
4,7K R2808
150K R2811
TD129 D2811
1U/50V C2811
RESSET
(MOS) MICRO PROZESSOR TMS 7040 VT 08
IC 2800
INT1
4,7K R2815
CSA 4,91 Q2814
1M R2814
27P C2813
27P C2814
SCL
SDA
0,1U C2808
IC 2830
IC 2840
SDA 2216
PCD 8572
SDA 2216
SDA 2516
0,1U C2833
C2834
24V U PP
R2831
C2831
R2832
C2832
R2849
D2849
+24V U PP
4,7UH L2849
ZPD5,6 D2841
10U/50V C2841
BD561 G T2841
470 R2841
100U 16V C2842
0,1U C2843
100U 16V C2844
0,1U C2846
22UH L2841
100U 16V C2847
0,1U C2848
+12V
56K R2852
BC548 B T2851
47U/25V C2851
33K R2851
1K R2853
BC558 B T2853
22P C2853
12,5UH L2857
150 R2854
120P C2857
470 R2856
1K R2857
BC558 B T2859
270 R2859
120 R2860
120 R2861
2,2U/50V C2861
FBAS CCVS
0,1U C2859
6MHZ Q2868
330 R2868
18P C2868
18P C2867
47N C2866
47N C2864
56K R2863
220P C2863
68N C2862
VCO
PHASE DET.
G
SYNCHRON SEPARATOR
SENSE
CLOCK GENERATOR
DATA SLICER
SAA 5331 (MOS) IC 2850
4,7K R2833
4,7K R2834
470 R2836
470 R2837
SDA
SCL
TTC
TTD
F6
VCS
CHARACTER GENERATOR
I²C
DATA ACQUIS.
TIMING CHAIN
SDA 5241 (MOS) IC 2860
SAND
TCS/SCS
10N C2869
0,68U C2836
27P C2871
22N C2875
15UH L2871
13,875 MHZ Q2872
27P C2872
100P C2873
270P C2874
22N C2876
470P C2877
1N C2878
15P C2879
10U/25V C2880
1,2K R2881
56K R2882
100 R2812
100 R2813
100 R2816
82 R2817
BC548 B T2812
BC548 B T2813
BC548 B T2816
BC548 B T2817
1,5K R2826
1,5K R2827
1,5K R2828
1,5K R2829
0,68U C2826
1,2K R2821
1,2K R2822
1,2K R2823
2,2K R2824
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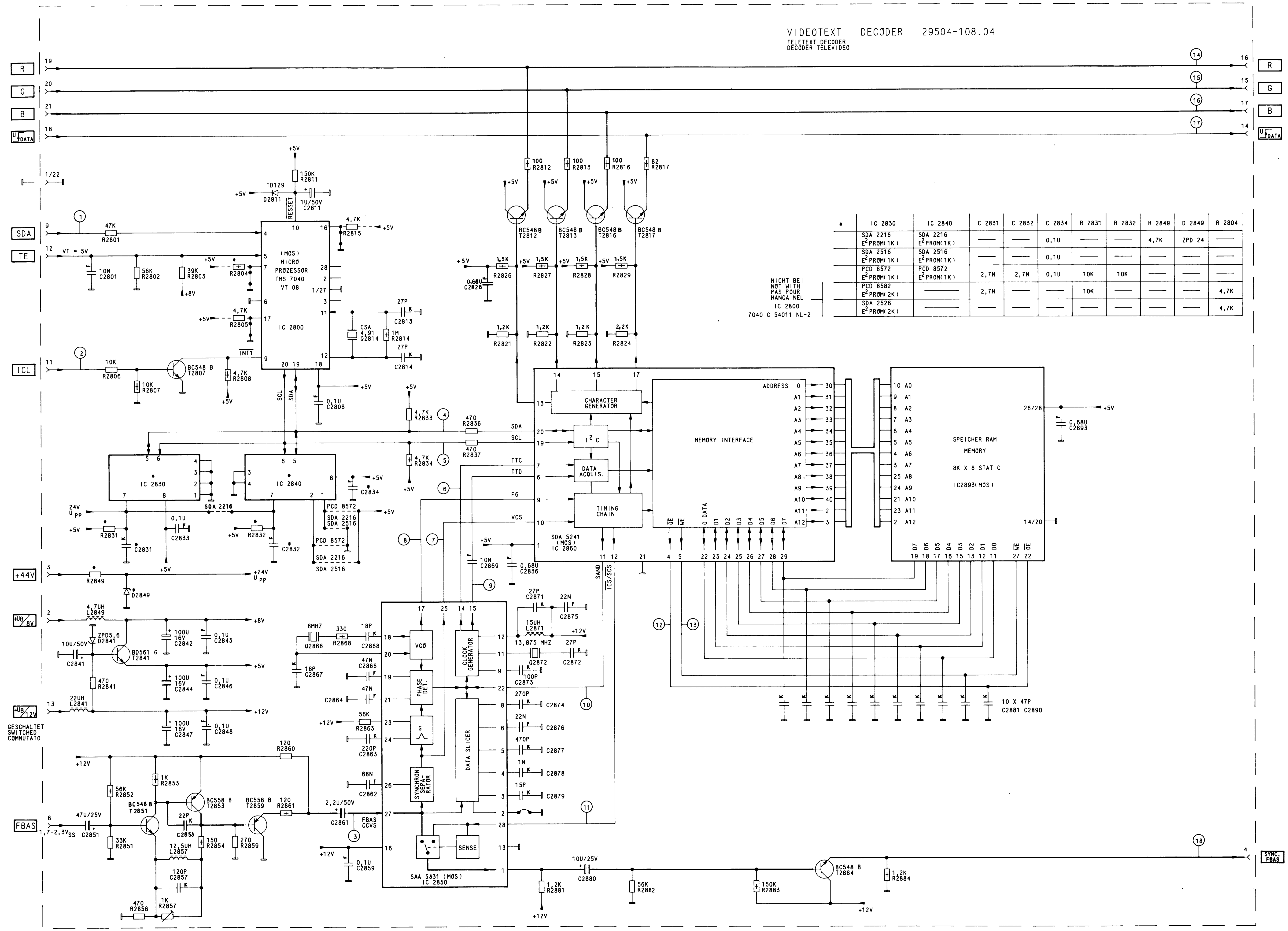
VIDEOTEXT - DECODER 29504-108.04
TELETEXT DECODER
DECODER TELEVIDEO



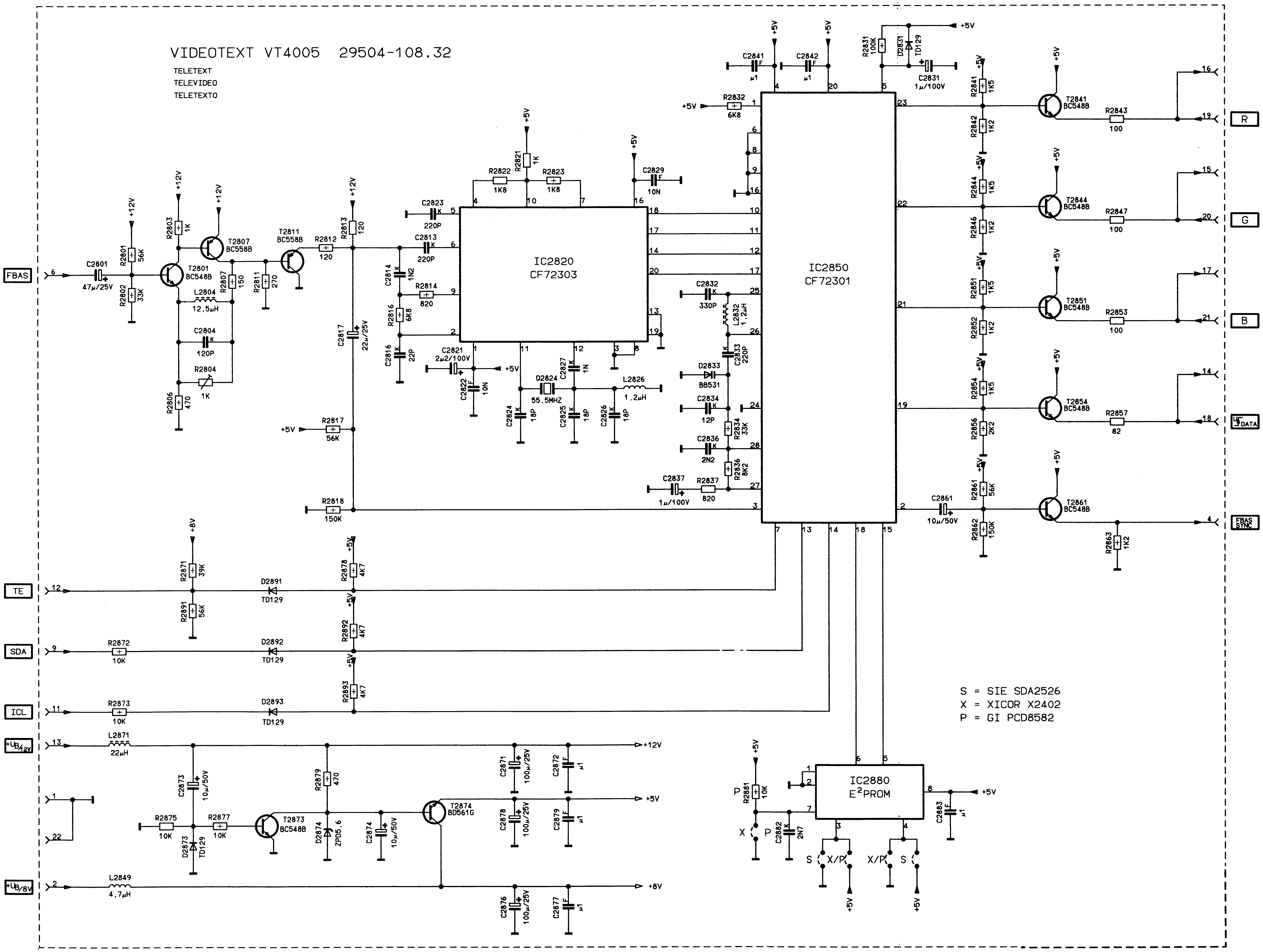
R
G
B
U DATA
SDA
TE
ICL
+44V
+UB 8V
+UB 12V
GESCHALTET
SWITCHED
COMMUTATO
FBAS
SYNC. FBAS
(MOS) MICRO PROZESSOR TMS 7040 VT 08
IC 2800
RESSET
IC 2830
IC 2840
SDA 5241 (MOS) IC 2860
CHARACTER GENERATOR
I²C
DATA ACQUIS.
TIMING CHAIN
MEMORY INTERFACE
SPEICHER RAM MEMORY
8K X 8 STATIC
IC2893(MOS)
SAA 5331 (MOS) IC 2850
VCO
PHASE DET.
CLOCK GENERATOR
DATA SLICER
SYNCHRON SEPARATOR
SENSE
10 X 47P C2881-C2890
BC548 B T2812
BC548 B T2813
BC548 B T2816
BC548 B T2817
BC548 B T2807
BD561 G T2841
BC548 B T2851
BC558 B T2853
BC558 B T2859
BC548 B T2884
13,875 MHZ
6MHZ

*	IC 2830	IC 2840	C 2831	C 2832	C 2834	R 2831	R 2832	R 2849	D 2849	R 2804
	SDA 2216 E²PROM(1K)	SDA 2216 E²PROM(1K)	——	——	0,1U	——	——	4,7K	ZPD 24	——
	SDA 2516 E²PROM(1K)	SDA 2516 E²PROM(1K)	——	——	0,1U	——	——	——	——	——
	PCD 8572 E²PROM(1K)	PCD 8572 E²PROM(1K)	2,7N	2,7N	0,1U	10K	10K	——	——	——
	PCD 8582 E²PROM(2K)	——	2,7N	——	——	10K	——	——	——	4,7K
	SDA 2526 E²PROM(2K)	——	——	——	——	——	——	——	——	4,7K

NICHT BEI
NOT WITH
PAS POUR
MANCA NEL
IC 2800
7040 C 54011 NL-2

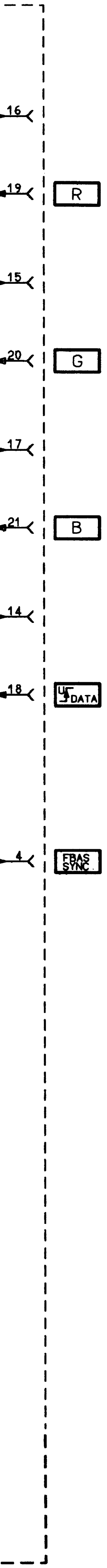
VIDEOTEXT VT4005 29504-108.32

TELETEXT
TELEVIDEO
TELETEXTO



FBAS
TE
SDA
ICL
+UB/12V
+UB/8V
R
G
B
UDATA
FBAS SYNC
IC2820
CF72303
IC2850
CF72301
IC2880
E²PROM
C2801 47µ/25V
R2801 56K
R2802 33K
T2801 BC548B
R2803 1K
T2807 BC558B
R2807 150
L2804 12,5µH
C2804 120P
R2804 1K
R2806 470
R2811 270
T2811 BC558B
R2812 120
R2813 120
C2817 22µ/25V
R2817 56K
R2818 150K
C2823 220P
C2813 220P
C2814 1N2
R2814 820
R2816 6K8
C2816 22P
R2821 1K
R2822 1K8
R2823 1K8
C2821 2µ2/100V
C2822 10N
Q2824 55,5MHZ
C2824 18P
C2825 18P
C2826 18P
C2827 1N
L2826 1,2µH
C2829 10N
C2841 µ1
C2842 µ1
R2831 100K
D2831 TD129
C2831 1µ/100V
R2832 6K8
C2832 330P
L2832 1,2µH
C2833 220P
D2833 BB531
C2834 12P
R2834 33K
C2836 2N2
R2836 8K2
C2837 1µ/100V
R2837 820
R2841 1K5
R2842 1K2
T2841 BC548B
R2843 100
R2844 1K5
R2846 1K2
T2844 BC548B
R2847 100
R2851 1K5
R2852 1K2
T2851 BC548B
R2853 100
R2854 1K5
R2856 2K2
T2854 BC548B
R2857 82
C2861 10µ/50V
R2861 56K
R2862 150K
T2861 BC548B
R2863 1K2
R2871 39K
R2891 56K
D2891 TD129
R2878 4K7
R2872 10K
D2892 TD129
R2892 4K7
R2873 10K
D2893 TD129
R2893 4K7
L2871 22µH
C2873 10µ/50V
R2875 10K
D2873 TD129
R2877 10K
T2873 BC548B
R2879 470
D2874 ZPD5,6
C2874 10µ/50V
T2874 BD561G
C2871 100µ/25V
C2872 µ1
C2878 100µ/25V
C2879 µ1
L2849 4,7µH
C2876 100µ/25V
C2877 µ1
R2881 10K
C2882 2N7
C2883 µ1
+12V
+8V
+5V
X
P
S
X/P

S = SIE SDA2526
X = XICOR X2402
P = GI PCD8582


16
19
R
15
20
G
17
21
B
14
18
DATA
4
FBAS SYNC

D

VT - Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videosteckkarte muß die Videotext - Steckerplatte entfernt werden. Der Einsteller R 2804 steht bei der Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2804 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da die Fehlerhäufigkeit wieder zunehmen kann.
Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

GB

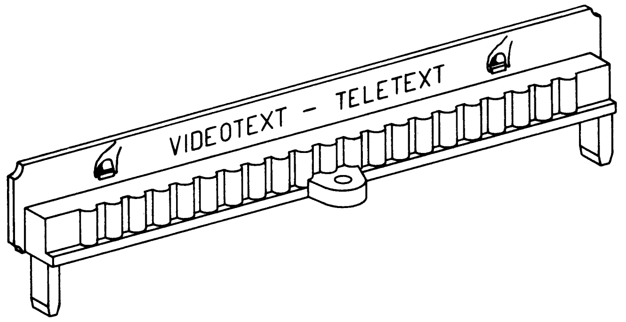
VT GB:Teletext) Instalation and matching adjustment.

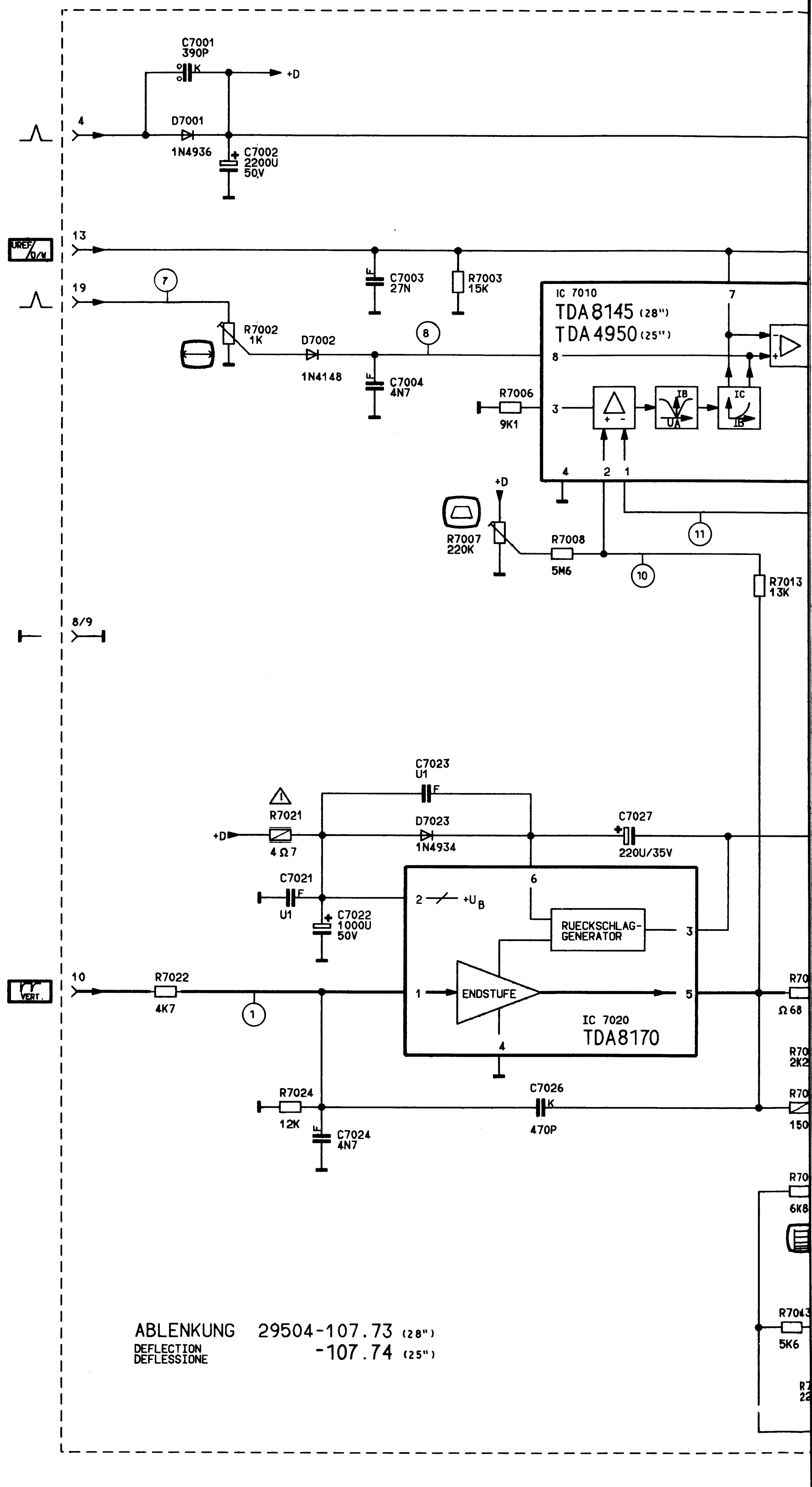
When fitting the Videotext (GB:Teletext) plug-in board, the Videotext plug plate has to be removed. The control R 2804 is set in the fully anti clockwise position when the unit is delivered (smallest treble boost: approx. 2dB). If, with a perfect aerial signal character faults occur, turn R 2804 slowly clockwise until the faults disappear. Do not turn R 2804 up any further as error rate may increase again.
Page 199 must always be selected a new during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

I

Montaggio e taratura d'addatamento della scheda ad innesto

Nel montare la scheda televideo togliere la piastrina televideo. IL regolatore R 2804 viene fornito col cursore girato completamente all'estrema sinistra (minima esaltazione delle alte frequenze, ca. 2 dB). Se si manifestano errori di carattere, nonostante un perfetto segnale d'antenna, girare lentamente il cursore di R 2804 verso destra fino ad eliminare gli errori. Non girarlo oltre può riaumentare la presenza degli errori.
Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.


VIDEOTEXT - TELETEXT


C7001
390P
K
+D
4
D7001
1N4936
C7002
2200U
50V
13
19
7
R7002
1K
D7002
1N4148
C7003
27N
R7003
15K
8
C7004
4N7
IC 7010
TDA8145 (28")
TDA4950 (25")
7
8
3
R7006
9K1
IB
UA
IC
IB
4
2
1
+D
R7007
220K
R7008
5M6
11
10
R7013
13K
8/9
C7023
U1
F
R7021
4Ω7
D7023
1N4934
C7027
220U/35V
C7021
U1
C7022
1000U
50V
2
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6
RUECKSCHLAG-GENERATOR
3
10
R7022
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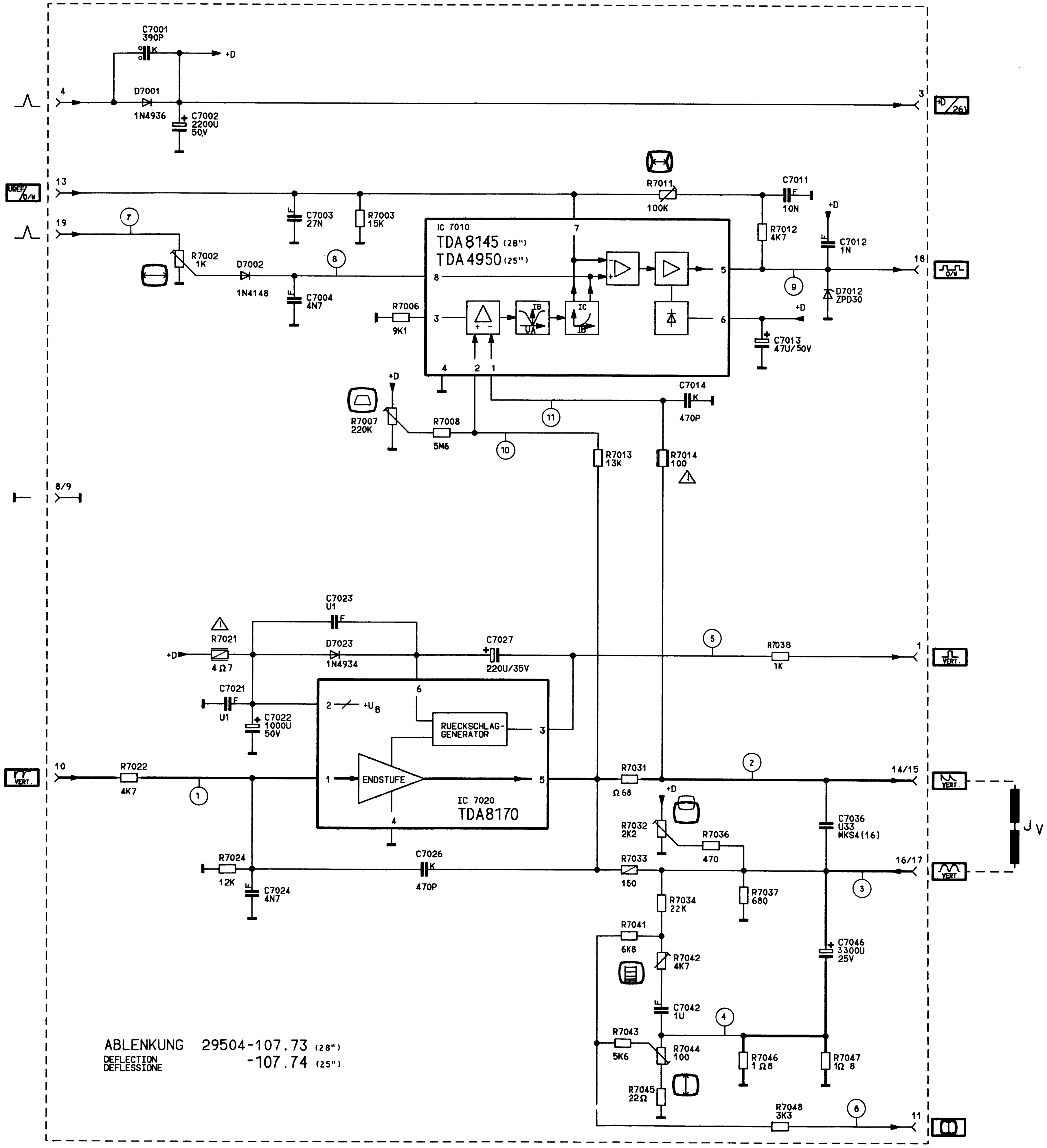
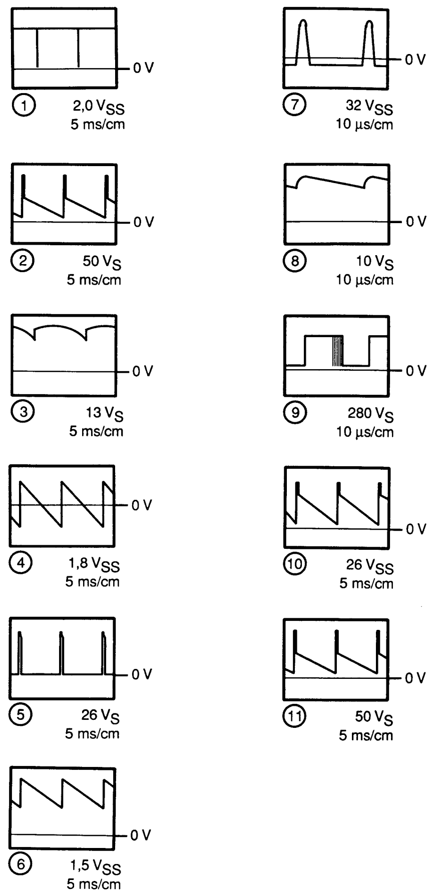
1
ENDSTUFE
5
IC 7020
TDA8170
4
R7024
12K
C7024
4N7
C7026
470P
Ω68
2K2
150
6K8
R7043
5K6
VERT.

ABLENKUNG 29504-107.73 (28")
DEFLECTION -107.74 (25")
DEFLESSIONE


C7001
390P
K
+D
4
D7001
1N4936
C7002
2200U
50V
3
+D/26V
13
UREF/O/W
19
⑦
R7002
1K
D7002
1N4148
⑧
C7003
27N
R7003
15K
C7004
4N7
R7011
100K
C7011
F
10N
IC 7010
TDA8145 (28")
TDA4950 (25")
7
8
3
5
6
4
2
1
IB
UA
IC
R7006
9K1
R7012
4K7
+D
C7012
1N
18
O/W
⑨
D7012
ZPD30
+D
C7013
47U/50V
C7014
K
470P
+D
R7007
220K
R7008
5M6
⑩
⑪
R7013
13K
R7014
100
8/9
C7023
U1
F
R7021
4Ω7
+D
D7023
1N4934
C7027
220U/35V
⑤
R7038
1K
1
VERT.
C7021
F
U1
C7022
1000U
50V
2
+UB
6
RUECKSCHLAG-
GENERATOR
3
10
VERT
R7022
4K7
①
ENDSTUFE
5
IC 7020
TDA8170
4
R7031
Ω68
②
14/15
VERT.
+D
R7032
2K2
R7036
470
C7036
U33
MKS4(16)
J V
R7024
12K
C7024
4N7
C7026
K
470P
R7033
150
16/17
VERT.
③
R7034
22K
R7037
680
R7041
6K8
R7042
4K7
C7046
3300U
25V
C7042
F
1U
④
R7043
5K6
R7044
100
R7046
1Ω8
R7047
1Ω 8
R7045
22Ω
R7048
3K3
⑥
11

ABLENKUNG 29504-107.73 (28")
-107.74 (25")
DEFLECTION
DEFLESSIONE

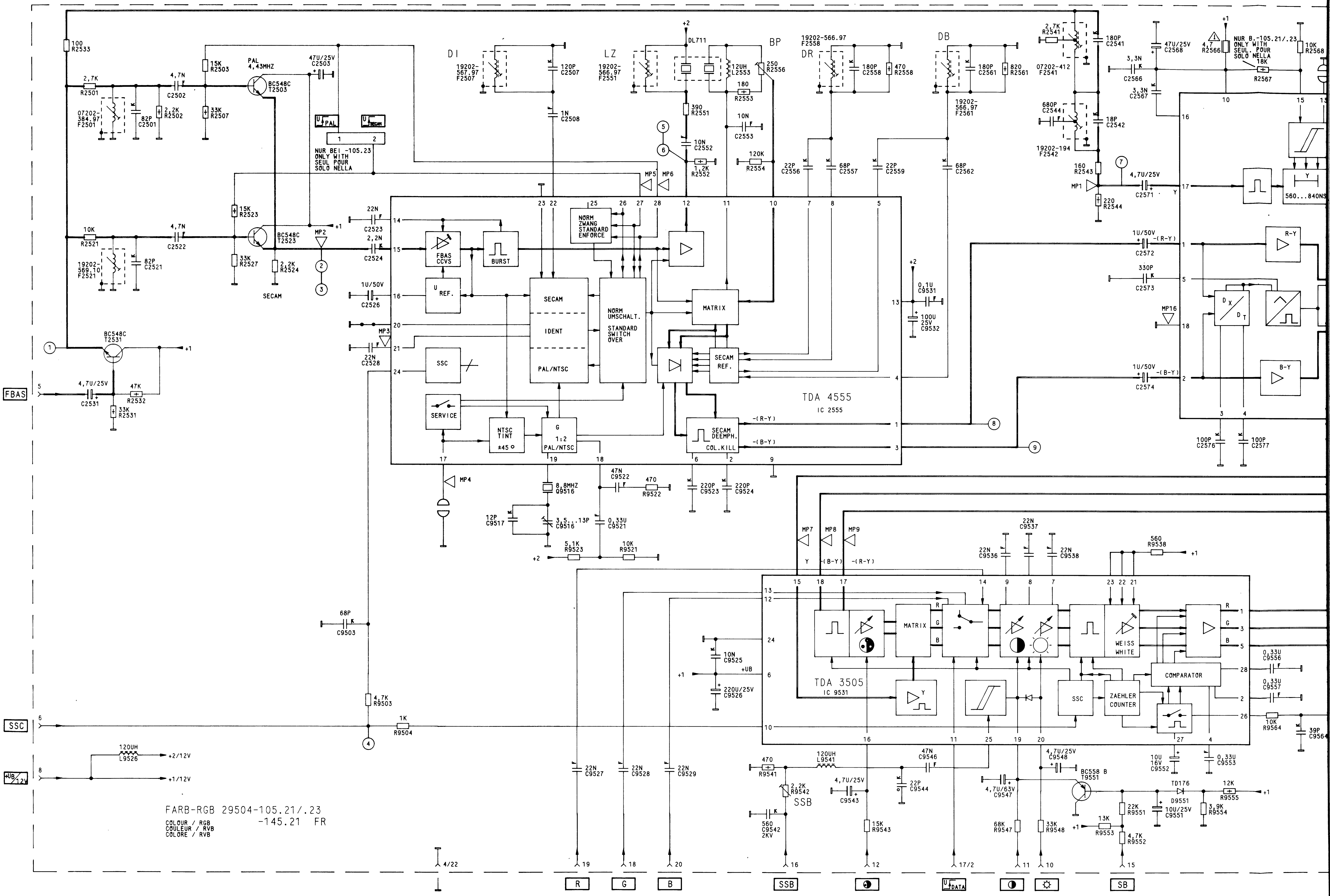
VERTIKALABLENKUNG


0 V
① 2,0 VSS 5 ms/cm
② 50 VS 5 ms/cm
③ 13 VS 5 ms/cm
④ 1,8 VSS 5 ms/cm
⑤ 26 VS 5 ms/cm
⑥ 1,5 VSS 5 ms/cm
⑦ 32 VSS 10 µs/cm
⑧ 10 VS 10 µs/cm
⑨ 280 VS 10 µs/cm
⑩ 26 VSS 5 ms/cm
⑪ 50 VS 5 ms/cm

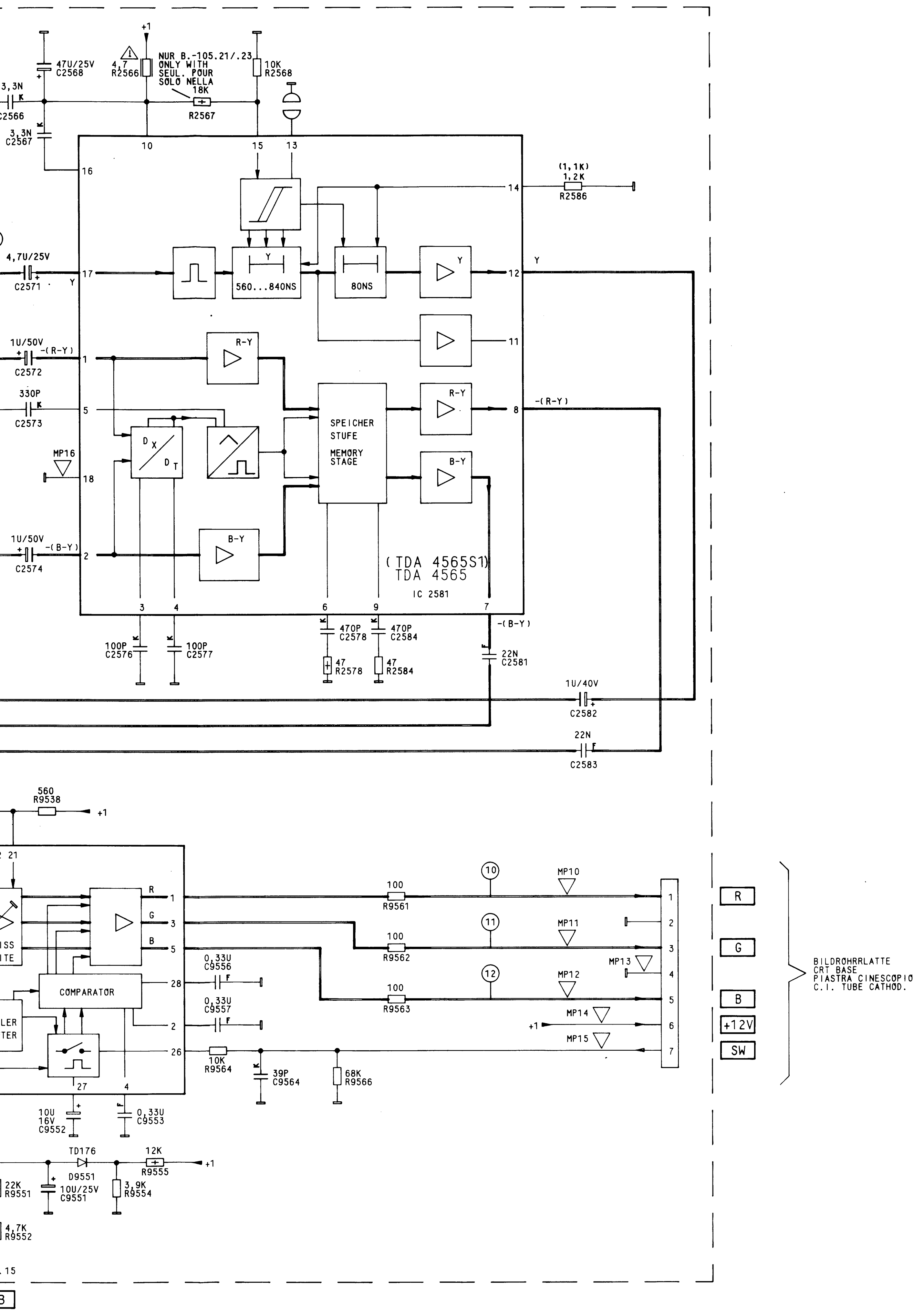
Anpassungsabgleich bei Austausch der Steckkarte

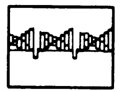
Matching alignment necessary when replacing the plug board

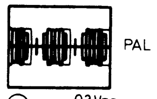
Taratura di attamento dopo la sostituzione di una scheda ad innesto


TDA 4555
IC 2555
TDA 3505
IC 9531
FBAS
SSC
UB/12V
R
G
B
SSB
SB
NUR BEI -105.23
ONLY WITH
SEUL POUR
SOLO NELLA
NUR B.-105.21/.23
ONLY WITH
SEUL. POUR
SOLO NELLA
BC548C T2503
BC548C T2523
BC548C T2531
BC558 B T9551
PAL 4,43MHZ
SECAM
DL711
DI
LZ
BP
DR
DB
FBAS CCVS
BURST
U REF.
NORM ZWANG STANDARD ENFORCE
SECAM
IDENT
PAL/NTSC
NORM UMSCHALT. STANDARD SWITCH OVER
MATRIX
SECAM REF.
SECAM DEEMPH. COL.KILL
SSC
SERVICE
NTSC TINT ±45°
G 1:2 PAL/NTSC
8,8MHZ Q9516
-(R-Y)
-(B-Y)
R-Y
B-Y
560...840NS
WEISS WHITE
COMPARATOR
ZAEHLER COUNTER
MP1
MP2
MP3
MP4
MP5
MP6
MP7
MP8
MP9
MP16
+1
+2
+UB
+2/12V
+1/12V
120UH L9526
120UH L9541
TD176 D9551
4/22
17/2

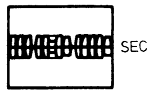
FARB-RGB 29504-105.21/.23
-145.21 FR
COLOUR / RGB
COULEUR / RVB
COLORE / RVB


47U/25V
C2568
+1
4,7
R2566
NUR B.-105.21/.23
ONLY WITH
SEUL. POUR
SOLO NELLA
18K
R2567
10K
R2568
3,3N
C2566
3,3N
C2567
4,7U/25V
C2571
1U/50V
-(R-Y)
C2572
330P
C2573
MP16
1U/50V
-(B-Y)
C2574
560...840NS
80NS
Y
R-Y
B-Y
SPEICHER STUFE
MEMORY STAGE
(TDA 4565S1)
TDA 4565
IC 2581
(1,1K)
1,2K
R2586
-(R-Y)
-(B-Y)
100P
C2576
100P
C2577
470P
C2578
470P
C2584
47
R2578
47
R2584
22N
C2581
1U/40V
C2582
22N
C2583
560
R9538
100
R9561
100
R9562
100
R9563
MP10
MP11
MP12
MP13
MP14
MP15
COMPARATOR
0,33U
C9556
0,33U
C9557
10K
R9564
39P
C9564
68K
R9566
10U
16V
C9552
0,33U
C9553
TD176
D9551
12K
R9555
22K
R9551
10U/25V
C9551
3,9K
R9554
4,7K
R9552
R
G
B
+12V
SW
BILDROHRRLATTE
CRT BASE
PIASTRA CINESCOPIO
C.I. TUBE CATHOD.

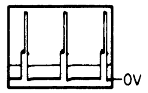

① 2,1 V_{SS} 20µs



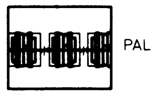
② 0,3 V_{SS} 20µs



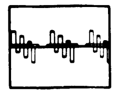
③ 0,2 V_{SS} 20µs

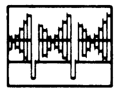


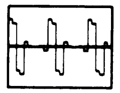
④ 11 V_{S} 20µs

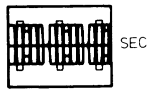


⑤ 1,4 V_{SS} 20µs

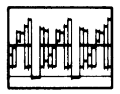

⑨ 1,3 V_{SS} 20µs

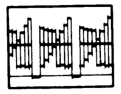

⑦ 1 V_{SS} 20µs

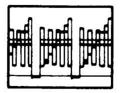

⑧ 1 V_{SS} 20µs



⑥ 2 V_{SS} 20µs


⑩ 2,7 V_{SS} 20µs


⑪ 2,7 V_{SS} 20µs


⑫ 2,7 V_{SS} 20µs

1. **Weißabgleich**
   - FuBK-Testbild einspeisen.
   - ◑min., ☼nom, ◑max. einstellen.
   - Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. **Sperrpunktabgleich**

   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen.
   - ◑min., ☼nom., ◑min., einstellen.
   - Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140-150V.

3. **Einstellungen im Farbkanal**
   - PAL-Testbild einspeisen.
   - FK nom., H nom. K max. einstellen.
   - IC-Pin 28 vom TDA 4555 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4555 mit Masse verbinden.
   - Mit Trimmer C9516 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
   - SECAM-Testbild einspeisen.
   - Tastkopf an Pin 1 vom TDA 4555 anschließen, mit Spule DR Nullinie des (R-Y)-Signals auf Zeilenniveau bringen.
   - Tastkopf an Pin 3 vom TDA 4555 anschließen, mit Spule DB Nullinie des (B-Y)-Signals auf Zeilentastniveau bringen.
   - Spule F 2521 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

4. **Strahlstrom**
   - Der Regler "SSB" wird werkseitig auf Mittelwert eingestellt.
   - Sollte bei vollem Kontrast und normal eingestellter Helligkeit in Spitzenweißfeldern des Sendertestbildes eine Defokussierung (starke Unschärfe bei weißen Schriftzeichen in Bildröhrenmitte) auftreten, so muß mit Regler "SSB" auf scharfe Schriftkonturen eingestellt werden (Reduzierung des Spitzenstrahlstromes).

1. **White level adjustment**
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to max.
   - Adjust presets VG and VB (CRT socket board) so that the picture does not show any colouration.

2. **Adjustment of cut-off point**

   Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.

   To check cut-off point (oscilloscope required), proceed as follows:
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to min.
   - Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).

     The black leves of the three cathode signals should be 140-150V.

3. **Adjustments in chroma channel**
   - Display PAL test pattern.
   - Adjust colour level and brightness to nominal value, contrast to maximum.
   - Connect pin 28 of IC TDA 4555 to +12V supply.
   - Connect pin 17 to IC TDA 4555 to chassis.
   - Adjust trimmer C9516 for stationary pattern in colour bars.
   - Remove wire links.
   - Connect test probe to test point MP 12. LBring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
   - Display SECAM test pattern.
   - Connect test probe to pin 1 of IC TDA 4555.
   - Use coil DR to align zero level of the (R-Y) signal with the line black level.
   - Connect test probe to pin 3 of IC TDA 4555.
   - Use coil DB to align zero level of the (B-Y) signal with the line black level.
   - Adjust coil F2521 so that the (B-Y) signal is free of overshooting.

4. **Beam current**
   - During manufacture the control "SSB" is adjusted to middle value.
   - If during max. contrast and normal brightness adjustment the peak-white fields of the test picture should be defocused (in the middle of the screen white letters are very distorted) the contours of the letters must be adjusted using control "SSB" (reducing the peak beam current).

1. **Taratura del bianco**
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
   - Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

2. **Taratura del punto di blocco**

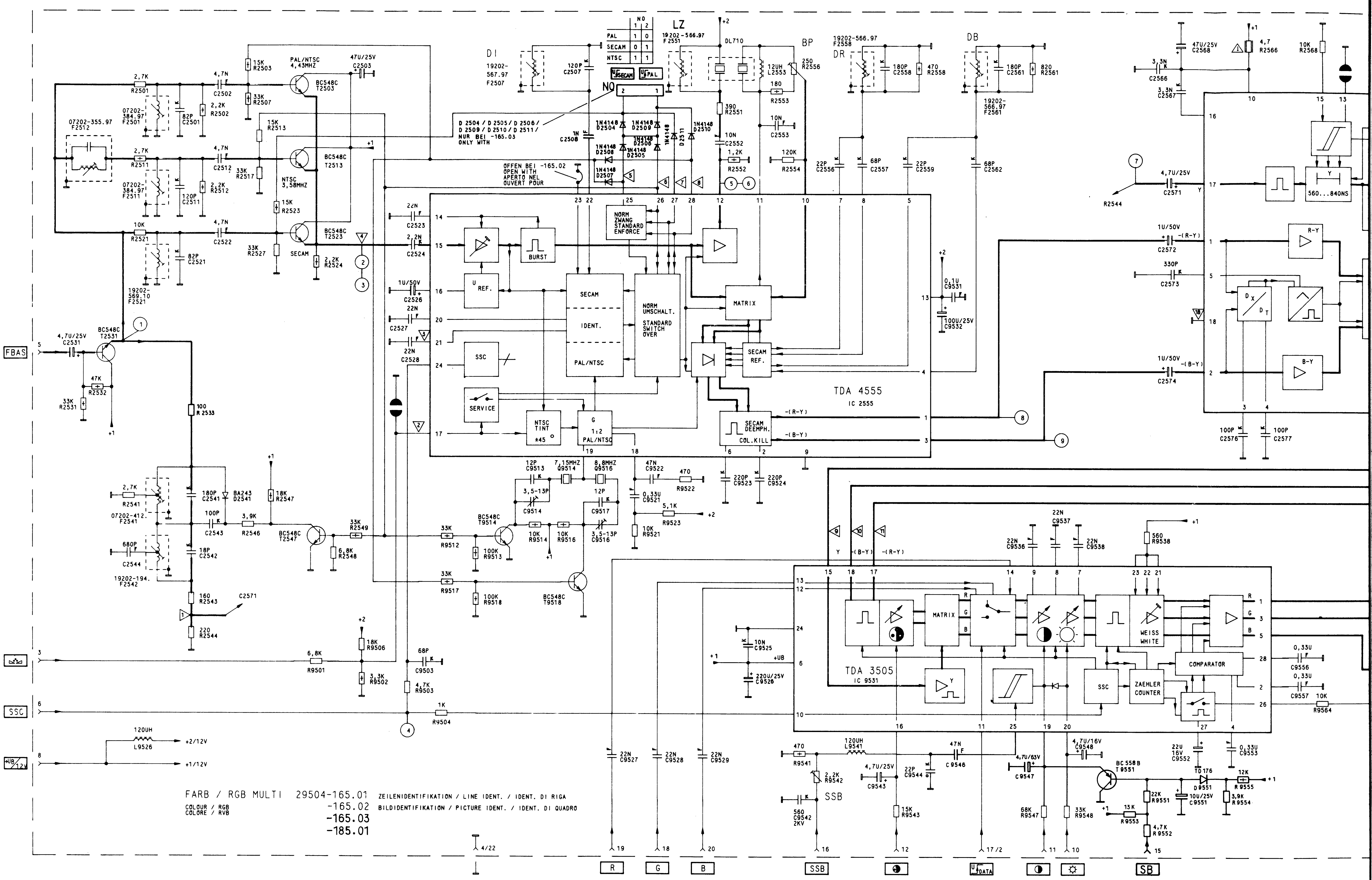
   Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.

   Controllo del punto di blocco (é necessario un oscilloscopio):
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
   - Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).

     Valore nero dei tre segnali catodici ca. 140-150V.

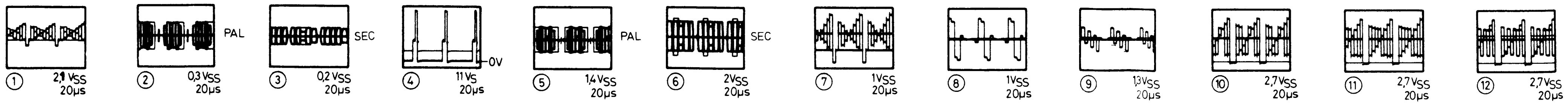
3. **Regolazione del canale colore**
   - Applicare un monoscopio PAL.
   - Regolare FK e H sul valore nominale, K al massimo.
   - Sull'integrato TDA 4555 collegare pin 28 a +12V.
   - Sull'integrato TDA 4555 collegare pin 17 a massa.
   - Con C9516 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
   - Applicare un monoscopio SECAM.
   - Collegare la sonda al pin 1 dell'integrato TDA 4555, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
   - Collegare la sonda al pin 3 dell'integrato TDA 4555, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
   - La bobina F2581 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

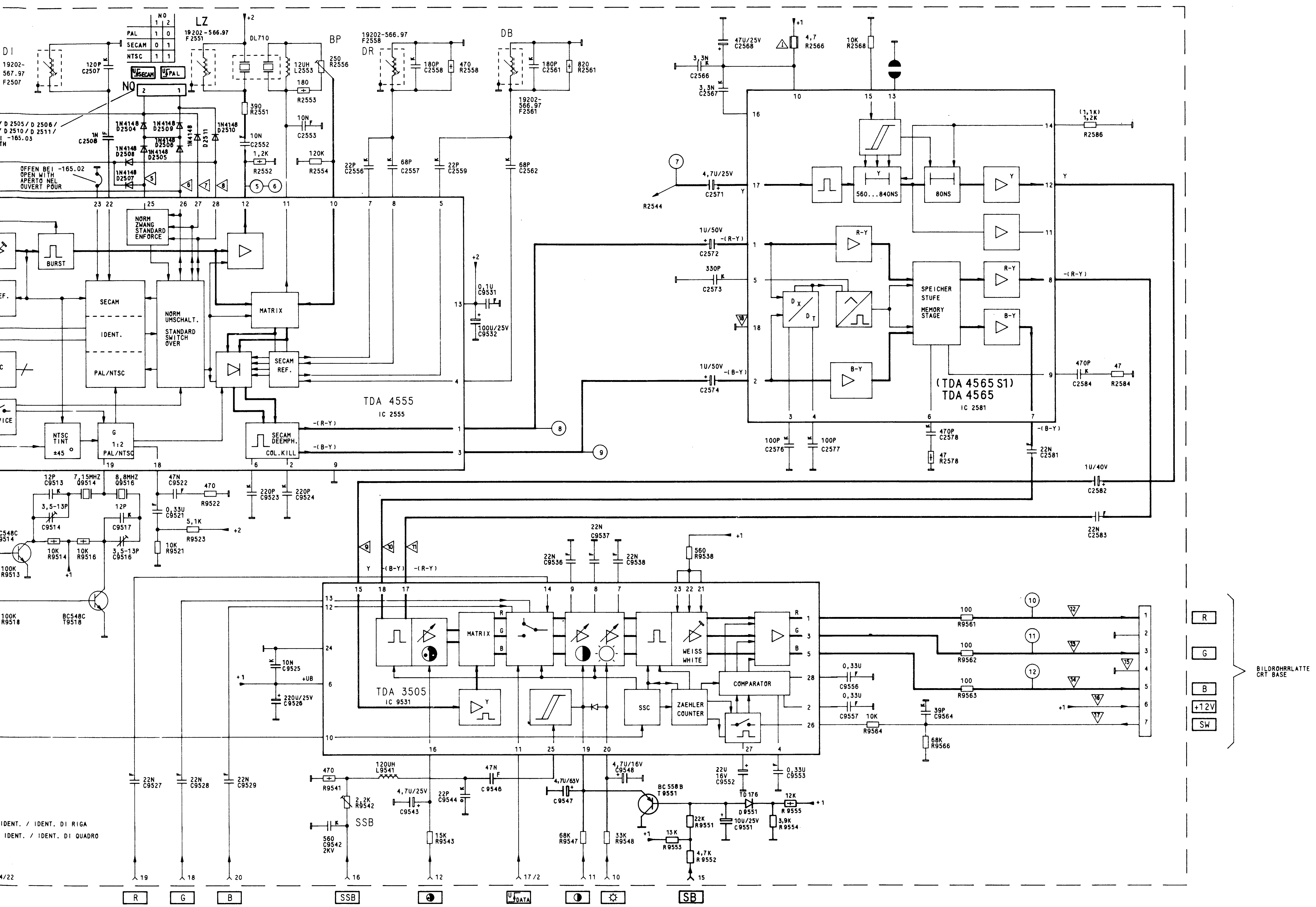
4. **Corrente catodica**
   - Il regolatore "SSB" viene regolato già in fabbrica su valori medi.
   - Se con il contrasto al massimo ed una regolazione normale della luminosità dovesse presentarsi una sfocalizzazione nei campi ultrabianchi del cinescopio (le lettere bianche al centro del cinescopio risultano molto sfuocate), agire sul regolatore "SSB" per mettere a fuoco i contorni delle lettere (riducendo la corrente catodica di picco).

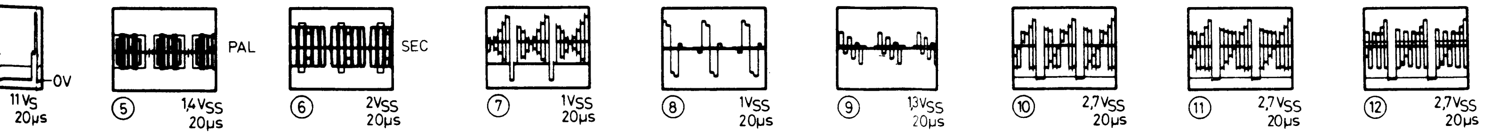

FBAS
SSC
+UB/12V
TDA 4555
IC 2555
TDA 3505
IC 9531
SECAM
IDENT.
PAL/NTSC
NORM UMSCHALT.
STANDARD SWITCH OVER
NORM ZWANG STANDARD ENFORCE
BURST
U REF.
MATRIX
SECAM REF.
SSC
SERVICE
NTSC TINT ±45°
G 1:2 PAL/NTSC
SECAM DEEMPH.
COL.KILL
WEISS WHITE
COMPARATOR
ZAEHLER COUNTER
LZ
DI
BP
DR
DB
NO
PAL
SECAM
NTSC
D 2504 / D 2505 / D 2506 / D 2509 / D 2510 / D 2511 / NUR BEI -165.03 ONLY WITH
OFFEN BEI -165.02 OPEN WITH APERTO NEL OUVERT POUR
PAL/NTSC 4,43MHZ
NTSC 3,58MHZ
7,15MHZ
8,8MHZ
560...840NS
R
G
B
SSB
SB

FARB / RGB MULTI 29504-165.01
COLOUR / RGB -165.02
COLORE / RVB -165.03
-185.01

ZEILENIDENTIFIKATION / LINE IDENT. / IDENT. DI RIGA
BILDIDENTIFIKATION / PICTURE IDENT. / IDENT. DI QUADRO




TDA 4555
IC 2555
TDA 4565
(TDA 4565 S1)
IC 2581
TDA 3505
IC 9531
SECAM
IDENT.
PAL/NTSC
NORM UMSCHALT.
STANDARD SWITCH OVER
NORM ZWANG STANDARD ENFORCE
BURST
MATRIX
SECAM REF.
SECAM DEEMPH.
COL.KILL
NTSC TINT
PAL/NTSC
SPEICHER STUFE
MEMORY STAGE
560...840NS
80NS
WEISS WHITE
COMPARATOR
ZAEHLER COUNTER
SSC
LZ
BP
DR
DB
NO
PAL
SECAM
NTSC
OFFEN BEI -165.02 OPEN WITH APERTO NEL OUVERT POUR
IDENT. / IDENT. DI RIGA
IDENT. / IDENT. DI QUADRO
BILDROHRPLATTE CRT BASE
R
G
B
+12V
SW
SSB
SB
SSB
U DATA



1. **Weißabgleich**
   - FuBK-Testbild
   - ◑ min., ☼ nom
   - Regler VG u
     Verfärbungen

2. **Sperrpunktabgle**
   Eine manuelle E
   eine automatisch
   Sperrpunkts (Oszi
   - FuBK-Testbild
   - ◑ min., ☼ nom
   - Tastkopf an d
     T 776 anhän
     Kathodensign

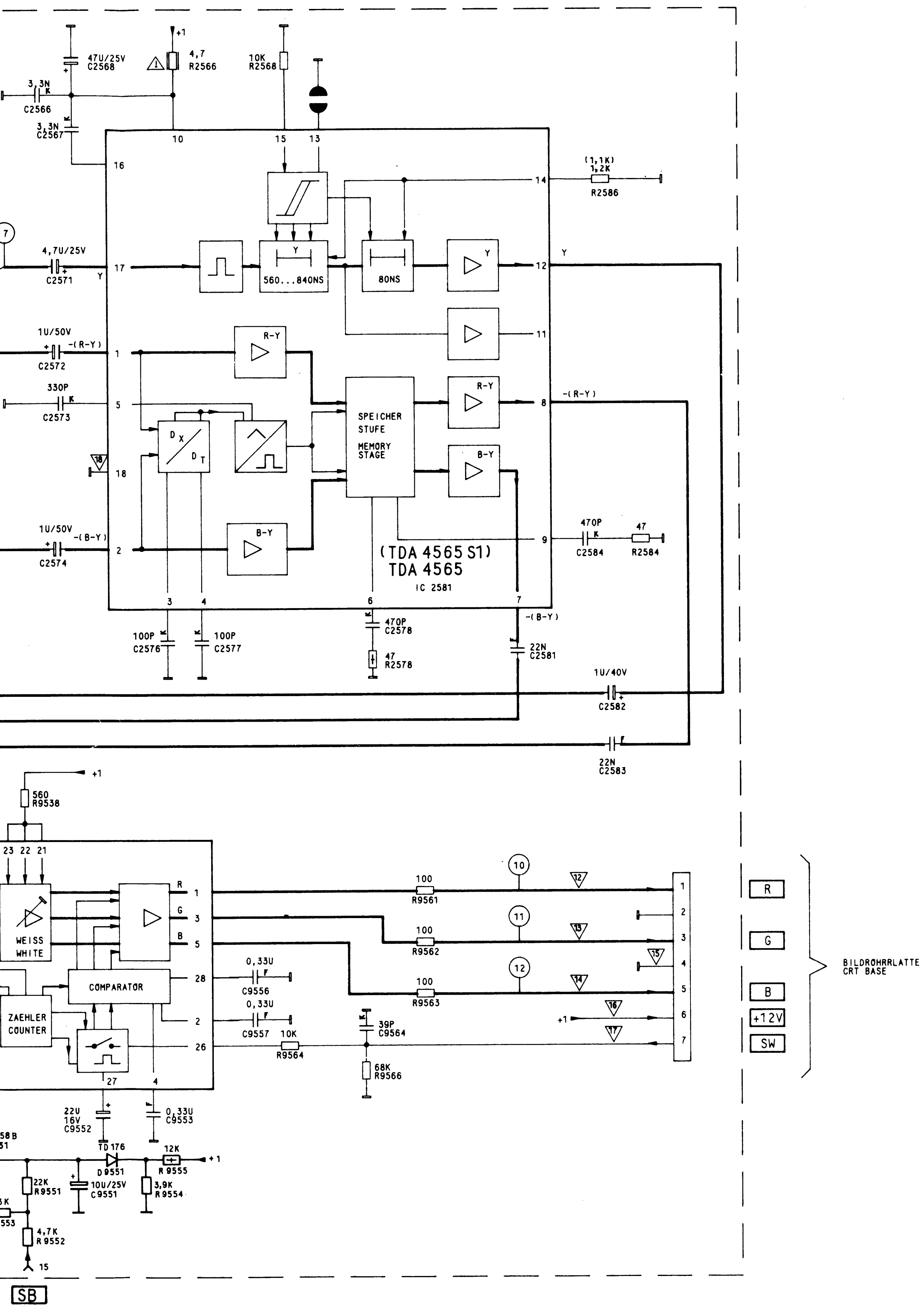
3. **Einstellungen Im**
   - PAL-Testbild
   - FK nom., H n
   - IC-Pin 28 vom
   - IC-Pin 17 vom
   - Mit Trimmer
     Stehen bringe
   - Kurzschlußbr
   - Tastkopf an
     Doppelbilder
   - NTSC-Testbil
   - IC-Pin 26 vom
   - IC-Pin 17 vom
   - Mit Trimmer
     Stehen bringe
   - Kurzschlußbr
   - SECAM-Test
   - Tastkopf an F
     Nullinie des (F
   - Tastkopf an F
     Nullinie des (E
   - Spule F 252
     Überschwinge

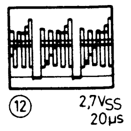
4. **Strahlstrom**
   - Der Regler "S
   - Sollte bei voll
     in Spitzenwe
     sierung (sta
     Bildröhrenmit
     scharfe Sch
     des Spitzenst

1. **White level adju**
   - Display colou
   - Set ◑ to min.,
   - Adjust prese
     picture does n

2. **Adjustment of c**
   Manual adjustme
   an automatic dark
   To check cut-of
   follows:
   - Display colou
   - Set ◑ to min.,
   - Connect test
     socket board)
     The black lev
     150V.

3. **Adjustments in**
   - Display PAL t
   - Adjust colou
     contrast to ma
   - Connect pin 2
   - Connect pin 1
   - Adjust trimme
   - Remove wire
   - Connect test
     image produc
     the preset BP
   - Display 3.5 M
   - Connect pin 2





1. Weißabgleich
- FuBK-Testbild einspeisen.
- ◑min., ☼nom, ◑max. einstellen.
- Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. Sperrpunktabgleich

Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
- FuBK-Testbild einspeisen.
- ◑min., ☼nom., ◑min., einstellen.
- Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140-150V.

3. Einstellungen im Farbkanal
- PAL-Testbild einspeisen.
- FK nom., H nom. K max. einstellen.
- IC-Pin 28 vom TDA 4555 mit +12V verbinden.
- IC-Pin 17 vom TDA 4555 mit Masse verbinden.
- Mit Trimmer C9516 die durchlaufenden Farbbalken zum Stehen bringen.
- Kurzschlußbrücken entfernen.
- Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
- NTSC-Testbild 3.5 MHz einspeisen.
- IC-Pin 26 vom TDA 4555 mit +12V verbinden.
- IC-Pin 17 vom TDA 4555 mit Masse verbinden.
- Mit Trimmer C9514 die durchlaufenden Farbbalken zum Stehen bringen.
- Kurzschlußbrücken entfernen.
- SECAM-Testbild einspeisen.
- Tastkopf an Pin 1 vom TDA 4555 anschließen, mit Spule DR Nullinie des (R-Y)-Signals auf Zeilenniveau bringen.
- Tastkopf an Pin 3 vom TDA 4555 anschließen, mit Spule DB Nullinie des (B-Y)-Signals auf Zeilentastniveau bringen.
- Spule F 2521 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

4. Strahlstrom
- Der Regler "SSB" wird werkseitig auf Mittelwert eingestellt.
- Sollte bei vollem Kontrast und normal eingestellter Helligkeit in Spitzenweißfeldern des Sendertestbildes eine Defokussierung (starke Unschärfe bei weißen Schriftzeichen in Bildröhrenmitte) auftreten, so muß mit Regler "SSB" auf scharfe Schriftkonturen eingestellt werden (Reduzierung des Spitzenstrahlstromes).

1. White level adjustment
- Display colour bar test pattern.
- Set ◑ to min., ☼ to nom., ◑ to max.
- Adjust presets VG and VB (CRT socket board) so that the picture does not show any colouration.

2. Adjustment of cut-off point

Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
To check cut-off point (oscilloscope required), proceed as follows:
- Display colour bar test pattern.
- Set ◑ to min., ☼ to nom., ◑ to min.
- Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).
  The black leves of the three cathode signals should be 140-150V.

3. Adjustments in chroma channel
- Display PAL test pattern.
- Adjust colour level and brightness to nominal value, contrast to maximum.
- Connect pin 28 of IC TDA 4555 to +12V supply.
- Connect pin 17 to IC TDA 4555 to chassis.
- Adjust trimmer C9516 for stationary pattern in colour bars.
- Remove wire links.
- Connect test probe to test point MP 12. LBring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
- Display 3.5 MHz NTSC test pattern.
- Connect pin 26 of IC TDA 4555 to +12V supply.
- Connect pin 17 of IC TDA 4555 to chassis.
- Adjust trimmer C 9514 for stationary pattern in colour bars.
- Remove wire links.
- Display SECAM test pattern.
- Connect test probe to pin 1 of IC TDA 4555.
- Use coil DR to align zero level of the (R-Y) signal with the line black level.
- Connect test probe to pin 3 of IC TDA 4555.
- Use coil DB to align zero level of the (B-Y) signal with the line black level.
- Adjust coil F2521 so that the (B-Y) signal is free of overshooting.

4. Beam current
- During manufacture the control "SSB" is adjusted to middle value.
- If during max. contrast and normal brightness adjustment the peak-white fields of the test picture should be defocused (in the middle of the screen white letters are very distorted) the contours of the letters must be adjusted using control "SSB" (reducing the peak beam current).

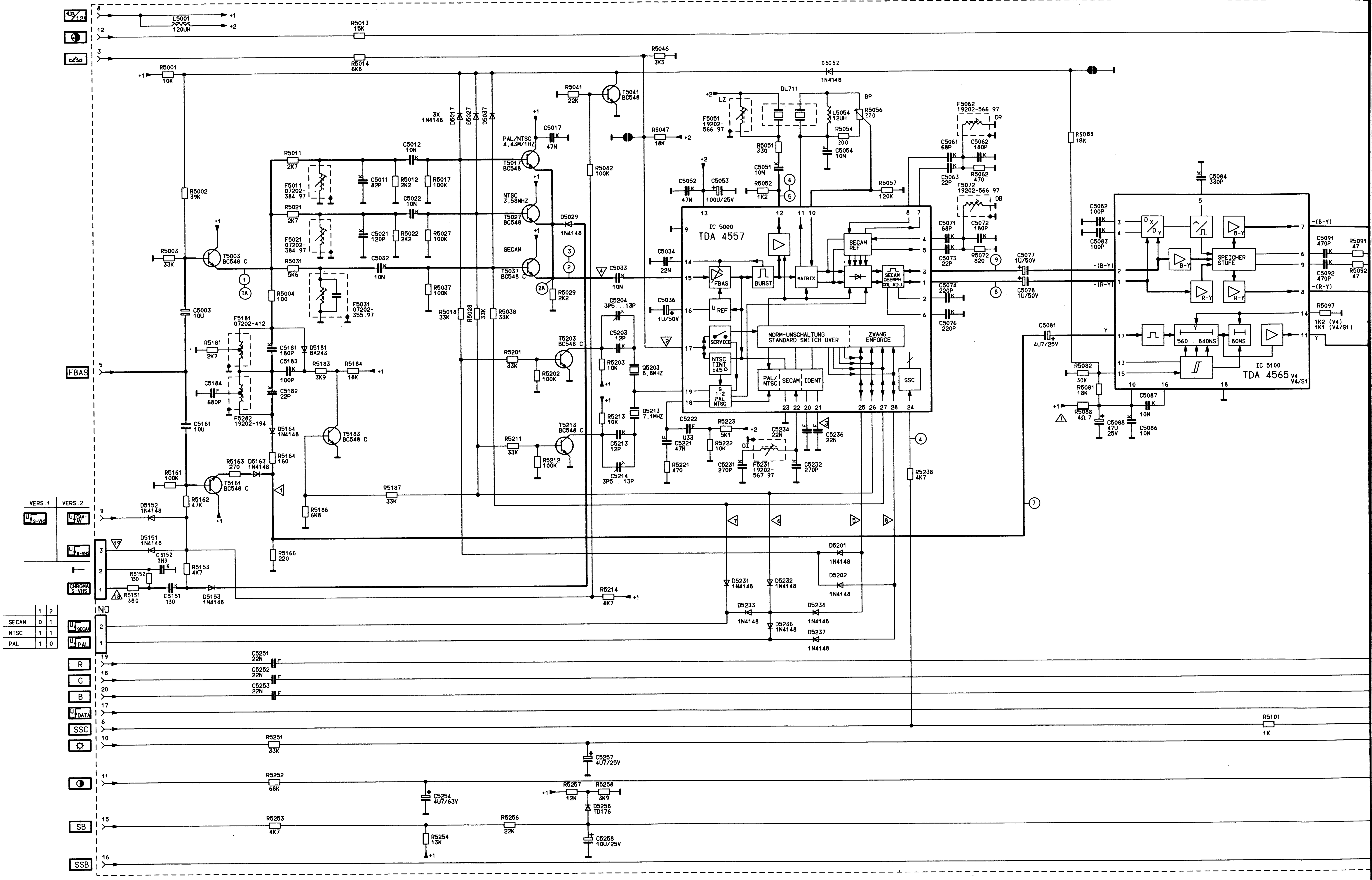
1. Taratura del bianco
- Applicare un monoscopio FuBK.
- Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
- Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

2. Taratura del punto di blocco

Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
Controllo del punto di blocco (é necessario un oscilloscopio):
- Applicare un monoscopio FuBK.
- Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
- Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
  Valore nero dei tre segnali catodici ca. 140-150V.

3. Regolazione del canale colore
- Applicare un monoscopio PAL.
- Regolare FK e H sul valore nominale, K al massimo.
- Sull'integrato TDA 4555 collegare pin 28 a +12V.
- Sull'integrato TDA 4555 collegare pin 17 a massa.
- Con C9516 fermare le barre colorate scorrevoli.
- Togliere i cortocircuiti.
- Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
- Applicare un monoscopio NTSC 3,5 MHz.
- Sull'integrato TDA 4555 collegare pin 26 a +12V.
- Sull'integrato TDA 4555 collegare pin 17 a massa.
- Con C9514 fermare le barre colorate scorrevoli.
- Togliere i cortocircuiti.
- Applicare un monoscopio SECAM.
- Collegare la sonda al pin 1 dell'integrato TDA 4555, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
- Collegare la sonda al pin 3 dell'integrato TDA 4555, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
- La bobina F2581 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

4. Corrente catodica
- Il regolatore "SSB" viene regolato già in fabbrica su valori medi.
- Se con il contrasto al massimo ed una regolazione normale della luminosità dovesse presentarsi una sfocalizzazione nei campi ultrabianchi del cinescopio (le lettere bianche al centro del cinescopio risultano molto sfuocate), agire sul regolatore "SSB" per mettere a fuoco i contorni delle lettere (riducendo la corrente catodica di picco).


IC 5000
TDA 4557
IC 5100
TDA 4565 V4 V4/S1
FBAS
BURST
MATRIX
SECAM REF
SECAM DEEMPH COL KILL
U REF
SERVICE
NTSC TINT ±45°
G 1:2 PAL NTSC
NORM-UMSCHALTUNG STANDARD SWITCH OVER
ZWANG ENFORCE
PAL/NTSC
SECAM
IDENT
SSC
SPEICHER STUFE
B-Y
R-Y
560...840NS
80NS
-(B-Y)
-(R-Y)
Y
FBAS
U S-VHS
U CAM-AY
CHROMA S-VHS
U SECAM
U PAL
R
G
B
U DATA
SSC
SB
SSB
VERS.1
VERS.2
NO
PAL/NTSC 4,43M/1HZ
NTSC 3,58MHZ
SECAM
T5003 BC548 C
T5017 BC548
T5027 BC548
T5037 BC548 C
T5041 BC548
T5161 BC548 C
T5183 BC548 C
T5203 BC548 C
T5213 BC548 C
L5001 120UH
L5054 12UH
R5001 10K
R5002 39K
R5003 33K
R5004 100
R5011 2K7
R5012 2K2
R5013 15K
R5014 6K8
R5017 100K
R5018 33K
R5021 2K7
R5022 2K2
R5027 100K
R5028 33K
R5029 2K2
R5031 5K6
R5037 100K
R5038 33K
R5041 22K
R5042 100K
R5046 3K3
R5047 18K
R5051 330
R5052 1K2
R5054 200
R5056 220
R5057 120K
R5062 470
R5072 820
R5081 18K
R5082 30K
R5083 18K
R5088 4Ω7
R5091 47
R5092 47
R5097 1K2 (V4) 1K1 (V4/S1)
R5101 1K
R5151 380
R5152 130
R5153 4K7
R5161 100K
R5162 47K
R5163 270
R5164 160
R5166 220
R5181 2K7
R5183 3K9
R5184 18K
R5186 6K8
R5187 33K
R5201 33K
R5202 100K
R5203 10K
R5211 33K
R5212 100K
R5213 10K
R5214 4K7
R5221 470
R5222 10K
R5223 5K1
R5238 4K7
R5251 33K
R5252 68K
R5253 4K7
R5254 13K
R5256 22K
R5257 12K
R5258 3K9
C5003 10U
C5011 82P
C5012 10N
C5017 47N
C5021 120P
C5022 10N
C5032 10N
C5033 10N
C5034 22N
C5036 1U/50V
C5051 10N
C5052 47N
C5053 100U/25V
C5054 10N
C5061 68P
C5062 180P
C5063 22P
C5071 68P
C5072 180P
C5073 22P
C5074 220P
C5076 220P
C5077 1U/50V
C5078 1U/50V
C5081 4U7/25V
C5082 100P
C5083 100P
C5084 330P
C5086 10N
C5087 10N
C5088 47U 25V
C5091 470P
C5092 470P
C5151 130
C5152 3N3
C5161 10U
C5181 180P
C5182 22P
C5183 100P
C5184 680P
C5203 12P
C5204 3P5...13P
C5213 12P
C5214 3P5...13P
C5221 47N
C5222 U33
C5231 270P
C5232 270P
C5234 22N
C5236 22N
C5251 22N
C5252 22N
C5253 22N
C5254 4U7/63V
C5257 4U7/25V
C5258 10U/25V
D5017
D5027
D5037
3X 1N4148
D5029 1N4148
D5052 1N4148
D5151 1N4148
D5152 1N4148
D5153 1N4148
D5163 1N4148
D5164 1N4148
D5181 BA243
D5201 1N4148
D5202 1N4148
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D5232 1N4148
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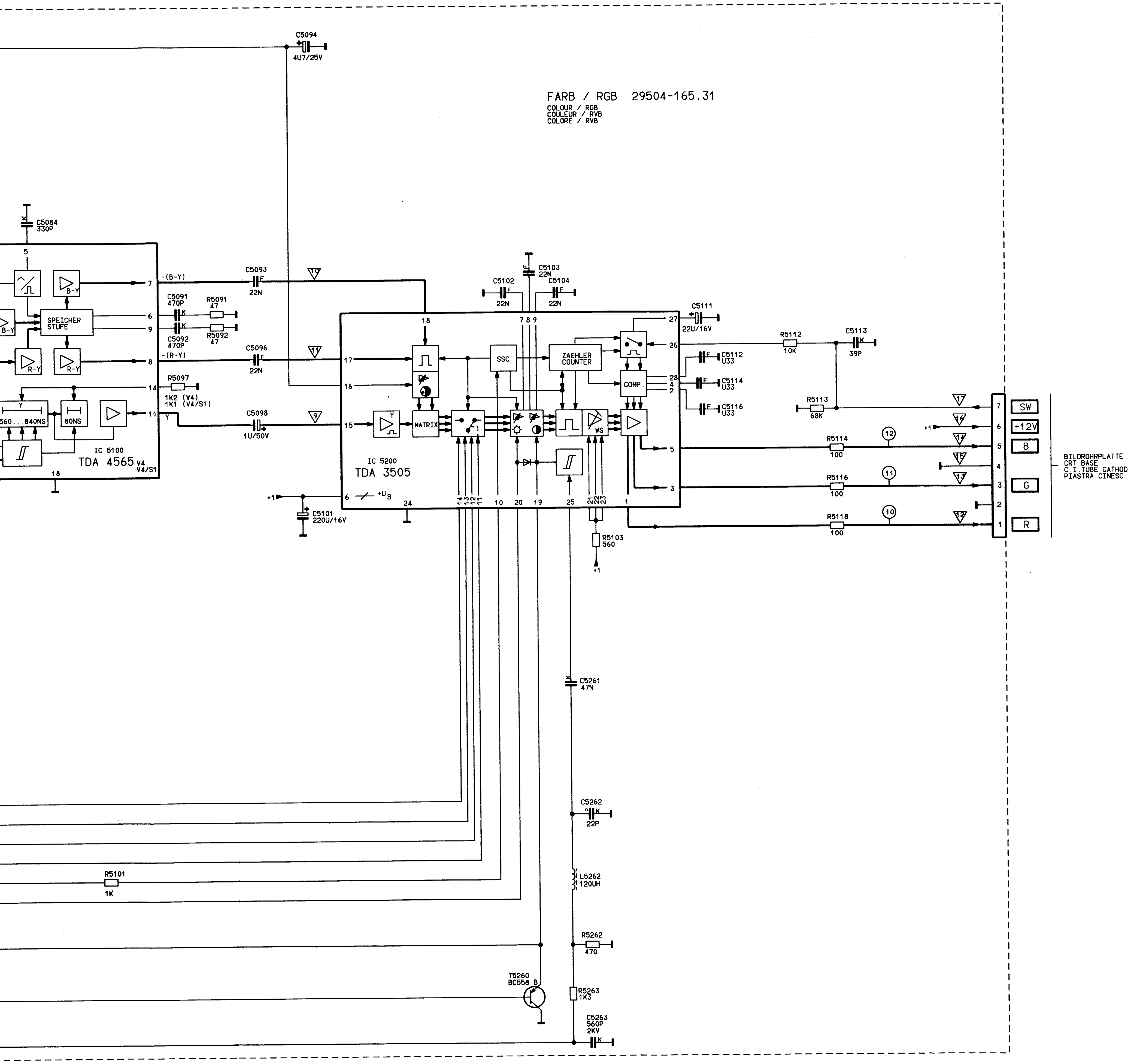
D5234 1N4148
D5236 1N4148
D5237 1N4148
D5258 TD176
F5011 07202-384.97
F5021 07202-384.97
F5031 07202-355.97
F5051 19202-566.97
F5062 19202-566.97
F5072 19202-566.97
F5181 07202-412
F5231 19202-567.97
F5282 19202-194
Q5203 8,8MHZ
Q5213 7,1MHZ
DL711
LZ
BP
DR
DB
DI

	1	2
SECAM	0	1
NTSC	1	1
PAL	1	0



FARB / RGB 29504-165.31
COLOUR / RGB
COULEUR / RVB
COLORE / RVB

C5094
4U7/25V
C5084
330P
SPEICHER STUFE
IC 5100
TDA 4565 V4 V4/S1
-(B-Y)
-(R-Y)
C5093
22N
C5091
470P
R5091
47
C5092
470P
R5092
47
C5096
22N
R5097
1K2 (V4)
1K1 (V4/S1)
C5098
1U/50V
560...840NS
80NS
C5102
22N
C5103
22N
C5104
22N
C5111
22U/16V
SSC
ZAEHLER COUNTER
COMP
MATRIX
WS
IC 5200
TDA 3505
C5101
220U/16V
C5112
U33
C5114
U33
C5116
U33
R5112
10K
C5113
39P
R5113
68K
R5114
100
R5116
100
R5118
100
R5103
560
SW
+12V
B
G
R
BILDROHRPLATTE
CRT BASE
C.I. TUBE CATHOD.
PIASTRA CINESC.
C5261
47N
C5262
22P
L5262
120UH
R5262
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T5260
BC558 B
R5263
1K3
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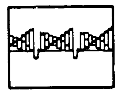
2KV
R5101
1K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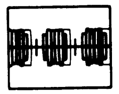
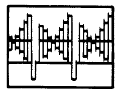
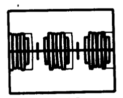
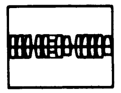
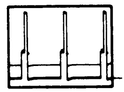
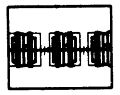

PAL
② 0,3 VSS 20µs

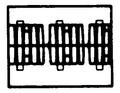

(1a) 2,1VSS 20µs

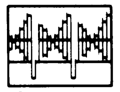

(2a) 130 mVSS 20µs

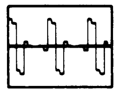

SEC
③ 0,2 VSS 20µs


0V
④ 11VS 20µs


PAL
⑤ 1,4VSS 20µs


SEC
⑥ 2VSS 20µs


⑦ 1VSS 20µs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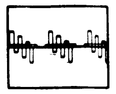
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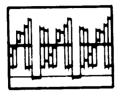
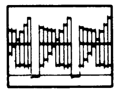
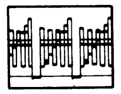

⑩ 2,7VSS 20µs


⑪ 2,7VSS 20µs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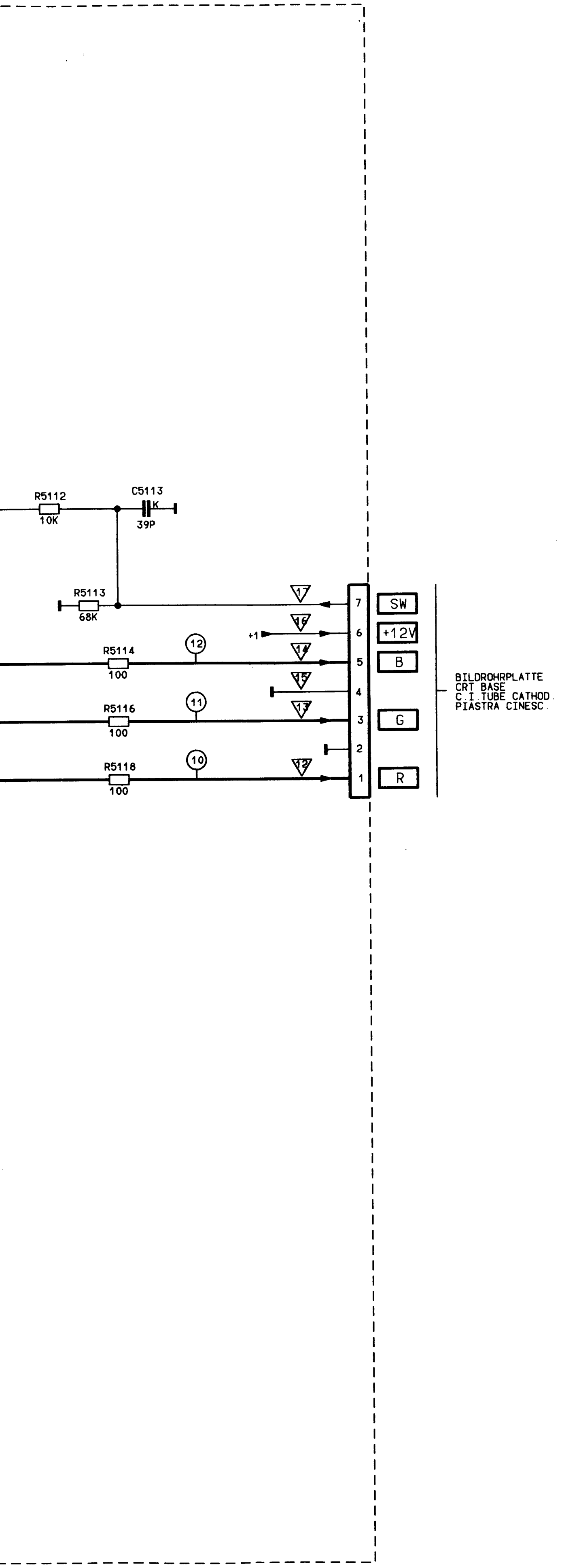

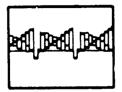
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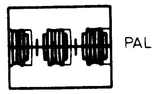
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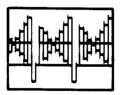
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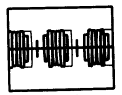
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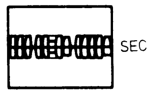
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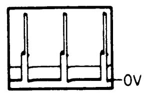
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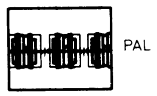
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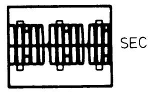
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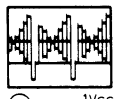
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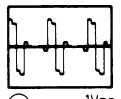
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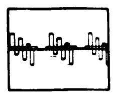
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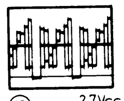
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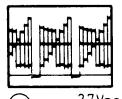
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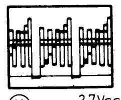

⑫

D

1. **Weißabgleich**
   - FuBK-Testbild einspeisen.
   - ◑ min., ☼ nom., ◑ max. einstellen.
   - Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. **Sperrpunktabgleich**
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen.
   - ◑ min., ☼ nom., ◑ min. einstellen.
   - Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140- 150 V.

3. **Einstellungen im Farbkanal**
   - PAL-Testbild einspeisen.
   - ◑ nom., ☼ nom., ◑ max. einstellen.
   - IC-Pin 28 vom TDA 4557 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4557 mit Masse verbinden.
   - Mit Trimmer C 5204 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
   - NTSC-Testbild 3.5 MHz einspeisen.
   - IC-Pin 26 vom TDA 4557 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4557 mit Masse verbinden.
   - Mit Trimmer C 5214 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - SECAM-Testbild einspeisen.
   - Tastkopf an Pin 1 vom TDA 4557 anschließen, mit Spule DR Nulllinie des (R-Y)-Signals auf Zeilenniveau bringen.
   - Tastkopf an Pin 3 vom TDA 4557 anschließen, mit Spule DB Nulllinie des (B-Y)-Signals auf Zeilentastniveau bringen.
   - Spule F 5031 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

GB

1. **White level adjustment**
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to max.
   - Adjust presets VG and VB (CTR socket board) so that the picture does not show any colouration.

2. **Adjustment of cut-off point**
   Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
   To check cut-off point (oscilloscope required), proceed as follows:
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to min
   - Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).The black levels of the three cathode signals should be 140-150V.

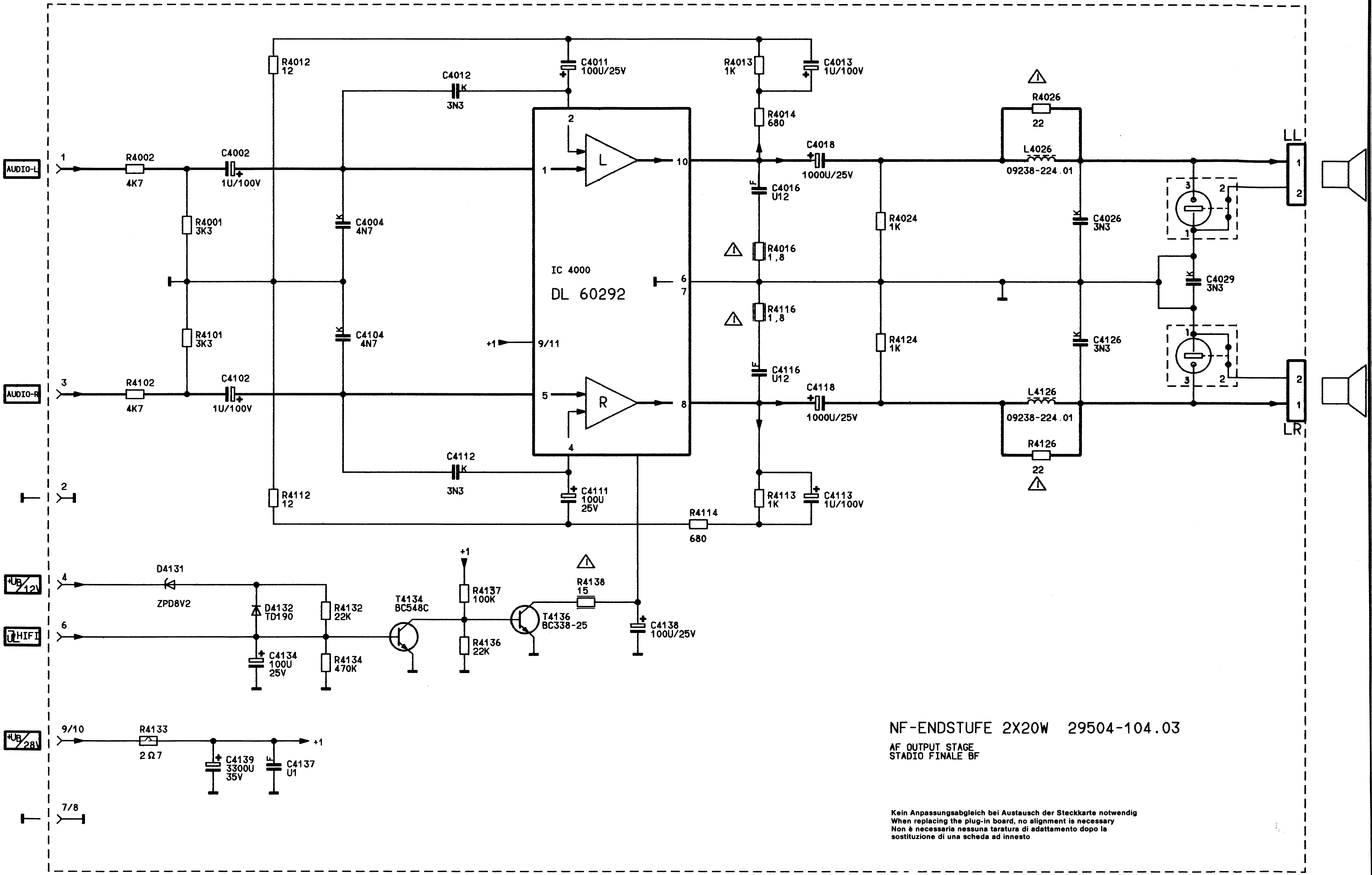
3. **Adjustments in chroma channel**
   - Display PAL test pattern.
   - Set ◑ to nom., ☼ to nom., ◑ to max.
   - Connect pin 28 of IC TDA 4557 to +12V supply.
   - Connect pin 17 to IC TDA 4557 to chassis.
   - Adjust trimmer C 5204 for stationary pattern in colour bars.
   - Remove wire links.
   - Connect test probe to test point MP 12. Bring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
   - Display 3.5 MHz NTSC test pattern.
   - Connect pin 26 of IC TDA 4557 to +12V supply.
   - Connect pin 17 of IC TDA 4557 to chassis.
   - Adjust trimmer C 5214 for stationary pattern in colour links.
   - Remove wire links.
   - Display SECAM test pattern.
   - Connect test probe to pin 1 of IC TDA 4557.
   - Use coil DR to align zero level of the (R-Y) signal with the line black level.
   - Connect test probe to pin 3 of IC TDA 4557.
   - Use coil DB to align zero level of the (B-Y) signal with the line black level.
   - Adjust coil F 5031 so that the (B-Y) signal is free of overshooting.

I

1. **Taratura del bianco**
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
   - Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

2. **Taratura del punto di blocco**
   Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
   Controllo del punto di blocco (é necessario un oscilloscopio):
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
   - Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
     Valore nero dei tre segnali catodici ca. 140-150V.

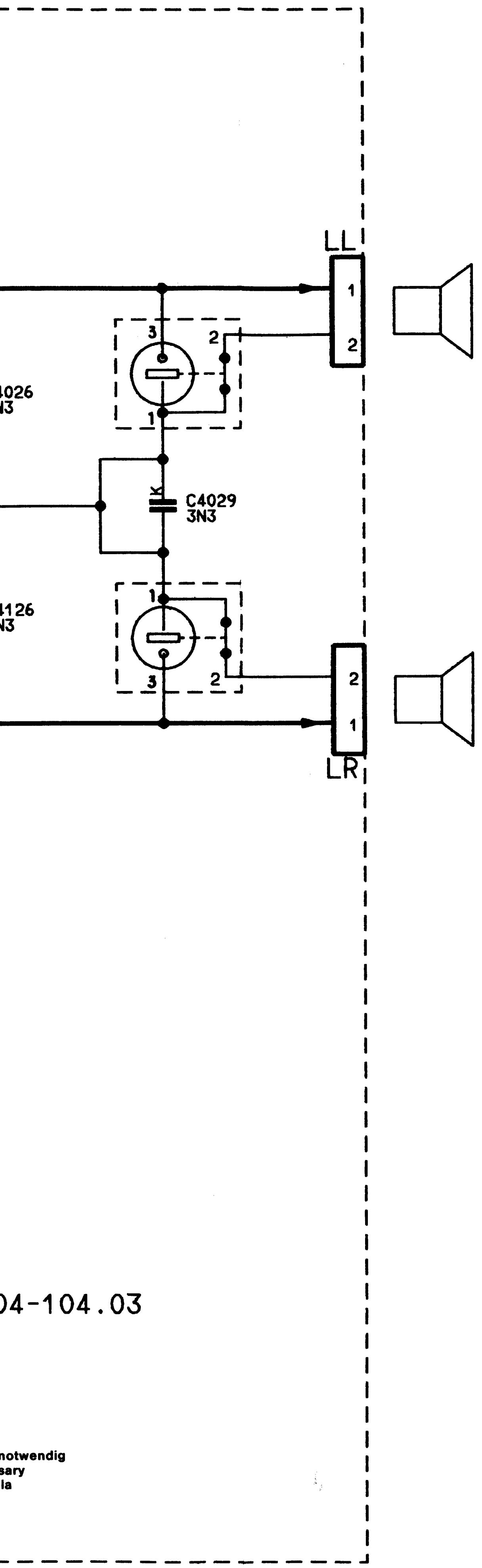
3. **Regolazione del canale colore**
   - Applicare un monoscopio PAL.
   - Regolare ◑ al nominale, ☼ sul valore nominale e ◑ al massimo.
   - Sull'integrato TDA 4557 collegare pin 28 a +12V.
   - Sull'integrato TDA 4557 collegare pin 17 a massa.
   - Con C 5204 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
   - Applicare un monoscopio NTSC 3,5 MHz
   - Sull'integrato TDA 4557 collegare pin 26 a +12V.
   - Sull'integrato TDA 4557 collegare pin 17 a massa.
   - Con C 5214 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Applicare un monoscopio SECAM.
   - Collegare la sonda al pin 1 dell'integrato TDA 4557, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
   - Collegare la sonda al pin 3 dell'integrato TDA 4557, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
   - La bobina F 5031 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

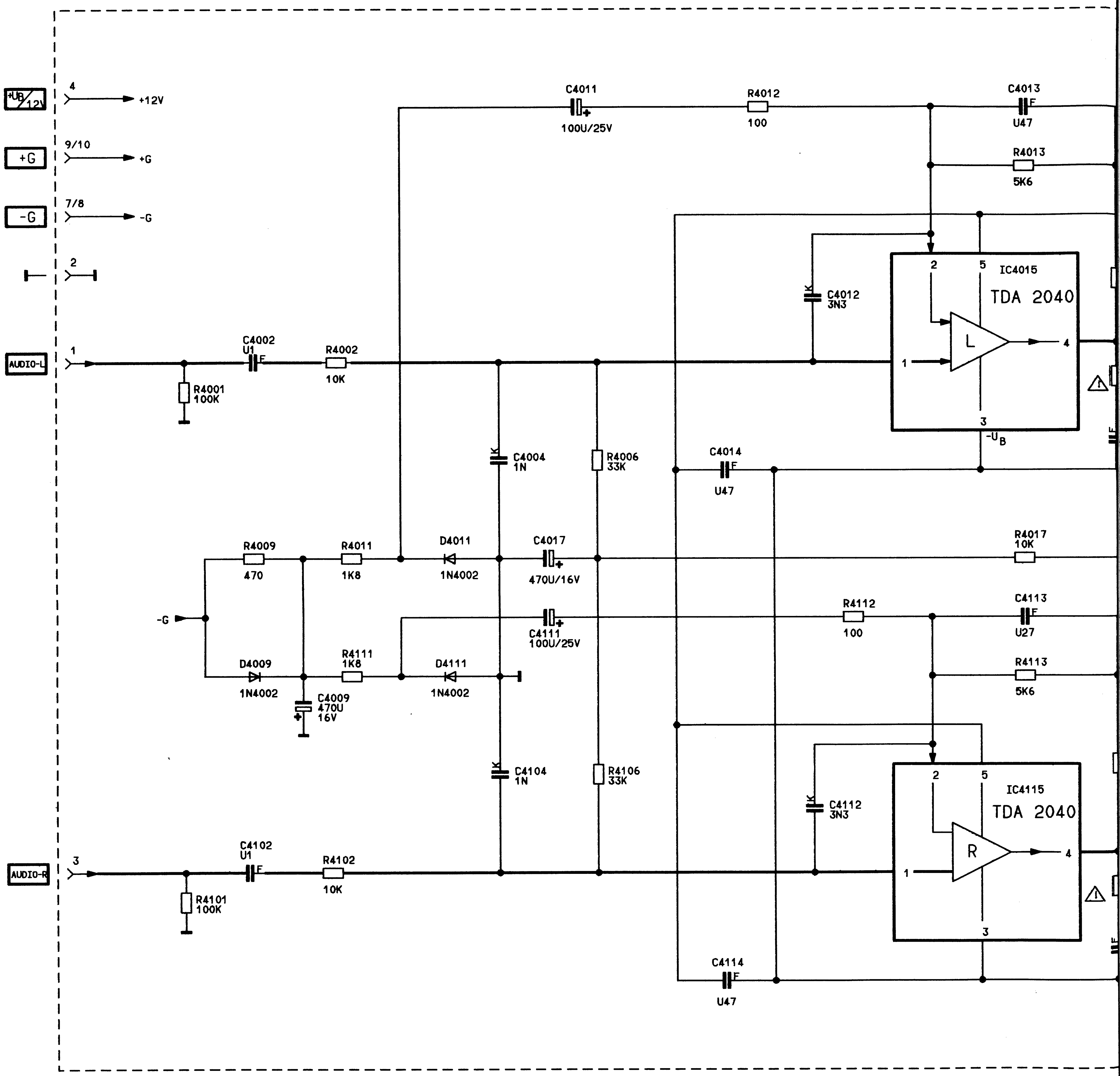

AUDIO-L
1
R4002
4K7
C4002
1U/100V
R4001
3K3
R4101
3K3
AUDIO-R
3
R4102
4K7
C4102
1U/100V
R4012
12
R4112
12
C4012
K
3N3
C4004
4N7
C4104
4N7
C4112
3N3
C4011
100U/25V
C4111
100U
25V
IC 4000
DL 60292
2
1
L
10
6
7
+1
9/11
5
R
8
4
R4013
1K
C4013
1U/100V
R4014
680
C4018
1000U/25V
C4016
U12
F
R4016
1,8
R4116
1,8
C4116
U12
C4118
1000U/25V
R4113
1K
C4113
1U/100V
R4114
680
R4024
1K
R4124
1K
R4026
22
L4026
09238-224.01
C4026
3N3
C4029
3N3
C4126
3N3
L4126
09238-224.01
R4126
22
LL
LR
1
2
3
2
+UB/12V
4
D4131
ZPD8V2
D4132
TD190
R4132
22K
C4134
100U
25V
R4134
470K
HIFI
6
T4134
BC548C
+1
R4137
100K
R4136
22K
T4136
BC338-25
R4138
15
C4138
100U/25V
+UB/28V
9/10
R4133
2Ω7
C4139
3300U
35V
C4137
U1
+1
7/8

NF-ENDSTUFE 2X20W 29504-104.03

AF OUTPUT STAGE
STADIO FINALE BF

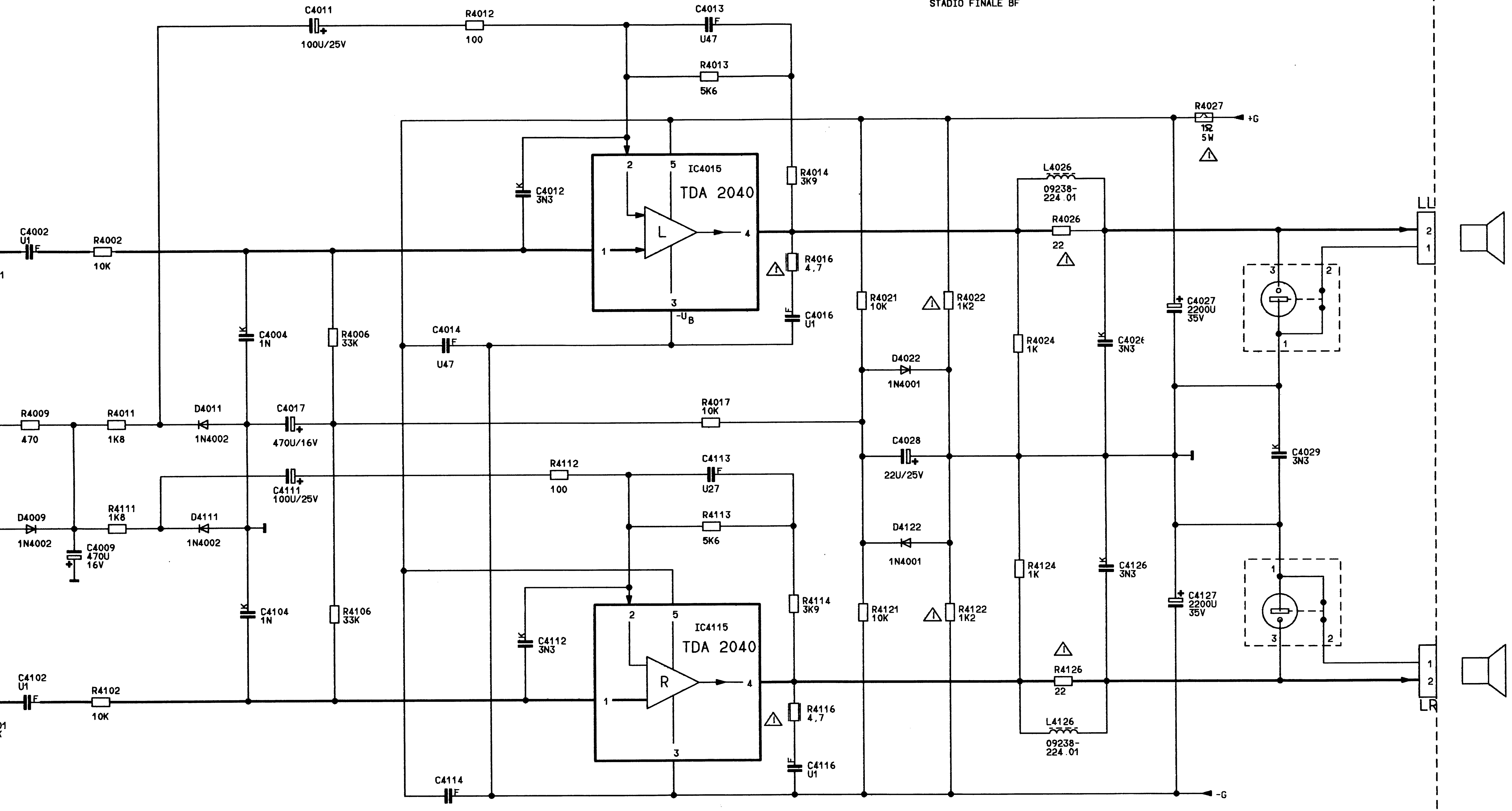
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto


LL
K
C4029
3N3
LR
04-104.03
notwendig
sary
ia


+UB 12V
4
+12V
+G
9/10
+G
-G
7/8
-G
2
AUDIO-L
1
R4001
100K
C4002
U1
F
R4002
10K
C4011
100U/25V
R4012
100
C4013
F
U47
R4013
5K6
K
C4012
3N3
2
5
IC4015
TDA 2040
L
1
4
3
-UB
C4004
1N
K
R4006
33K
C4014
F
U47
R4009
470
R4011
1K8
D4011
1N4002
C4017
470U/16V
R4017
10K
-G
D4009
1N4002
R4111
1K8
D4111
1N4002
C4111
100U/25V
R4112
100
C4113
F
U27
R4113
5K6
C4009
470U
16V
K
C4104
1N
R4106
33K
K
C4112
3N3
2
5
IC4115
TDA 2040
R
1
4
3
AUDIO-R
3
R4101
100K
C4102
U1
F
R4102
10K
C4114
F
U47
F
F

NF-ENDSTUFE 2X35W 29504-104.08

AF OUTPUT STAGE
STADIO FINALE BF



C4011
100U/25V
R4012
100
C4013
U47
R4013
5K6
R4027
1Ω
5W
+G
IC4015
TDA 2040
L
2
5
1
4
3
-U_B
C4012
3N3
R4014
3K9
R4016
4,7
C4016
U1
L4026
09238-224.01
R4026
22
LL
2
1
C4027
2200U
35V
C4002
U1
R4002
10K
C4004
1N
R4006
33K
C4014
U47
R4021
10K
R4022
1K2
R4024
1K
C4026
3N3
D4022
1N4001
R4009
470
R4011
1K8
D4011
1N4002
C4017
470U/16V
R4017
10K
C4028
22U/25V
C4029
3N3
R4112
100
C4113
U27
C4111
100U/25V
D4009
1N4002
R4111
1K8
D4111
1N4002
R4113
5K6
D4122
1N4001
C4009
470U
16V
C4104
1N
R4106
33K
C4112
3N3
IC4115
TDA 2040
R
R4114
3K9
R4121
10K
R4122
1K2
R4124
1K
C4126
3N3
C4127
2200U
35V
C4102
U1
R4102
10K
R4116
4,7
C4116
U1
R4126
22
L4126
09238-224.01
LR
1
2
C4114
U47
-G

Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto

TABELLE UEBER 110° BILDROEHRENTYPEN
TABLE OF 110° PICTURE TUBE TYPES
TABELLA DI TIPI DI TUBI A 110°
TABLEAU DES MODELES DE TUBES CATHOD 110°

○ = RUNDROEHRE/ CIRCULAR PICTURE TUBE / TUBO AD ANGOLI TONDI / TUBE A COINS RONDS

☐ = FLAT SQUARE-ROEHRE / FLAT SQUARE TUBE / TUBO FLAT SQUARE / TUBE FLAT SQUARE

⌀	TYPE TYPE TIBO MODELE	HERSTELLER MANUFACTURER DITTA FABRICANT	BEMERKUNG REMARK OSSERVAZIONE REMARQUE	L_V MH	L_H MH	R_V Ω	R_H Ω	U_H KV	U_{FOC} KV	SACHNUMMER ORDER NO. N. D'ORDINAZIONE N. DE PRODUITE
21"/55CM	A 51 EAK 01X 05	PHILIPS	☐ TINTED GLASS 45 AX	11,2	1,84	5,76	1,91	25	7,75	8300-020-351
22"/56CM	A 56-540 X	PHILIPS/ ELEKTRONSKA	○ CLEAR GLASS 30 AX	10	1,5	5,9	1,3	25	7	8300-020-390
22"/56CM	560 EYB 22-TC 01	HITACHI	○ CLEAR GLASS 30 AX ERSATZ (PIL SOCKEL / REPL. PIL SOCKET RICAMBIO ZOCCOLO PIL / RECHANGE SOCLE PIL	25	1,5	10,7	1,5	25	7	
22"/56CM	A 56-701 X	VIDEO COLOR	○ CLEAR GLASS PIL	24,6	1,5	9,6	1,33	25	7	
25"/63CM	A 59 EAK 00X 01	PHILIPS	☐ CLEAR GLASS 45 AX	11	1,85	6,5	1,85	25	7,75	8300-020-400
25"/63CM	A 59 EAK 01X 01	PHILIPS	☐ TINTED GLASS 45 AX	11	1,85	6,5	1,85	25	7,75	8300-020-401
25"/63CM	A 59 EAS 00X 01	VIDEO COLOR	☐ CLEAR GLASS FS 10	24,6	1,5	9,6	1,33	25	7,75	8300-020-405
26"/66CM	A 66-540 X	PHILIPS/ ELEKTRONSKA	○ CLEAR GLASS 30 AX	9,7	1,5	5,85	1,3	25	7	8300-030-540
28"/70CM	A 66 EAK 00X 01	PHILIPS	☐ CLEAR GLASS 45 AX	11	1,85	6,5	1,85	25	7,75	8300-030-410
28"/70CM	A 66 EAK 01X 01	PHILIPS	☐ TINTED GLASS 45 AX	11	1,85	6,5	1,85	25	7,75	8300-030-412
28"/70CM	A 66 EAK 50X 33	PHILIPS	☐ CLEAR GLASS 45 AX (32 KHZ)	8,8	0,426	5,22	0,6	25	7,75	8300-030-433
28"/70CM	A 66 EAK 51X 32	PHILIPS	☐ TINTED GLASS 45 AX (32 KHZ)	6,5	0,426	3,9	0,6	25	7,75	8300-030-438
28"/70CM	A 66 EAK 50X 01	PHILIPS	☐ CLEAR GLASS 45 AX (II. GENER.)	10,33	1,83	6,7	1,84	25	7,75	
28"/70CM	A 66 EAK 51X 01	PHILIPS	☐ TINTED GLASS 45 AX (II. GENER.)	10,33	1,83	6,7	1,84	25	7,75	8300-030-435
28"/70CM	A 66 EAS 00X 01	VIDEO COLOR	☐ CLEAR GLASS FS 10	24,6	1,5	9,6	1,33	25	7,75	8300-030-411
28"/70CM	A 66 ECF 00X 01	SEL	☐ PLANIGON	11	1,85	5,4	1,85	25	7,1	
32"/82CM	A 76 JTS 90X 03 (W)	TOSHIBA	☐ TINTED GLASS	24,6	1,5	9,6	1,26	29	8,1	8300-020-760
37"/95CM	A 89 JKA 81X	MITSUBISHI	☐ TINTED GLASS (I GENER)	19,0	0,8	6	0,89	30	7,4	8300-020-890
37"/95CM	A 89 JVU 11X	MITSUBISHI	☐ TINTED GLASS (II. GENER.)	14,5	0,8	7,5	0,81	30	7,4	8300-020-891

GERAET SET APPARECCHIO APPAREIL	SACHNUMMER ORDER NO. N.DI ORDINAZ N.DE PRODUIT	BILDROEHRE PICTURE TUBE CINESCOPIO. TUBE CATHOD.	CUC 4635 CHASSIS TELAIO 29701-056.	BR-PLATTE CRT BASE PIASTRA CINESC. C.I.TUBE CATHOD. 29304-070.	BED.EINHEIT CONTR. UNIT UNITA DI COMANDO UNITE DE COMMANDE 29501-	NETZSCHALTER-EINHEIT MAINS SWITCH UNIT UNITA INTERR. DI RETE UNITE INTERR. SECTEUR 29304-065.	KOPFH. ANSCHL.PL. HEADPHONE SOCKET BOARD PIASTRA PRESA CUFFIA C.I.RACCORD CASQUE 29304-	CINCHBUCHSENPL. PHONO SOCKET BOARD PIASTRA PRESE CINCH C.I. PRISES CINCH 29305-008.	TELE-PILOT 29622-
ST 70-460 TEXT	9.25500-02	28" II ☐ TINTED 45 AX	.01	.40	-074.01/.03	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.01
ST 70-466 TEXT	9.25554-02	28" II ☐ TINTED 45 AX	.01	.40	-066.30/.40	.52	AUF CINCHBUCHSENPL.	.09	-053.01
ST 70-460	9.25500-01	28" II ☐ TINTED 45 AX	.06	.40	-074.01/.03	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.01
ST 63-466 TEXT	9.25555-02	25" ☐ TINTED 45 AX	.14	.40	-066.30/.40	52	AUF CINCHBUCHSENPL.	.09	-053.01
ST 70-460 TEXT/GB	9.25500-65	28" II ☐ TINTED 45 AX	.17	.40	-074.01	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.01
ST 70-460 FASTEXT/GB	9.25500-66	28" II ☐ TINTED 45 AX	.18	.40	-074.01	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.01
ST 7063 TEXT	9.25535-05	28" II ☐ TINTED 45 AX	.01	.40	-074.01/.03	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.02
			CUC 4620						
ST 63-460 TEXT	9.25528-02	25" ☐ TINTED 45 AX	.04	.40	-074.01	.51	AUF BED.-EINHEIT	AUF BED.-EINHEIT	-053.01
ST 63-460	9.25528-01	25" ☐ TINTED 45 AX	.08	.40	-074.01	.51	——— // ———	——— // ———	-053.01

Ersatzteilliste (Auszug) • List of Spare- Parts (extract) • Lista ricambi (estratto)

Pos. No.	Fig. No.	Bestell-Nr. Part No./Ref. Nr. d' ordinazioni	Benennung	Description	Denominazion
			Steckkarte	Plug in circuit board	Scheda
1		29504-101.06	Kabeltuner	Cable tuner	Tuner per tv cavo
2		29504-102.12	ZF-Verstärker	IF-amplifier	Amplificatore FI
oder					
2		29504-102.13	ZF-Verstärker	IF-amplifier	Amplificatore FI
3		29504-105.23	Farb/RGB	Color/RGB	Colore/RGB
4		29504-107.73	Ablenkung	Deflection	Deflessione
5		29504-108.31	Videotext TV 4005	Videotext TV 4005	Videotext TV 4005
6		29504-104.08	NF-Stereo-Baustein	AF-stereo module	BF-stereo-modulo
7		29504-108.92	VT-Steckerplatte (.06)	dummy plug vt (.06)	Piastra spina televideo (.06)
			Mechanische Teile	Mechanical parts	Parti meccaniche
8		29304-070.40	Bildrohrplatte kpl.	Picture tube plate	Piastra cinescopio
8.1		29303-752.95	Bildrohrfassung	Picture tube socket	Zoccolo cinescopio
8.2		8104-982-014	Dämpfungsperle	Anti vibration	Perlina ammortizzatrice
9		29700-358.01	Bausteinhalter	Module holder	Supporto modulo
10		29700-359.01	Bausteinhalter	Module holder	Supporto modulo
11		29700-317.01	Bausteinhalter	Module holder	Supporto modulo
12		29500-807.01	Abdeckung	Cover	Cupertura
13		09621-113.02	2x Sicherungshalter	Fuse holder	Portafusibile
14		29303-153.01	Montageclip	Mounting clip	Clip di montaggio
15		29303-153.02	Montageclip f. Trans.	Mounting clip f.trans.	Clip di montaggio p.trans.
16		29303-153.11	Montageclip f. Trans.	Mounting clip f.trans.	Clip di montaggio p.trans.
17		29304-060.55	Euro-AV-Buchsenpl.kpl.	Euro-AV-socket plate	Euro/scart-piastra prese
17.1		29303-119.05	Peri-Buchse	Peri-socket	Presa peri
18		29303-364.01	Tuneraufnahme	Tuner holder	Supporto tuner
19		29700-282.01	Kabelhalter	Cable clamp	Supporto cavo
20		29700-324.02	Kabelhalter für Siemens/Kaskade	Cable clamp f. Siemens/kascade	Supporto cavo p.Siemens/ Moltiplicatore in cascate
21		29700-283.01	Kabelhalter für Roed./Kaskade	Cable clamp f. Roed./kascade	Supporto cavo p.Roed./ Moltiplicatore in cascate
			Elektrische Teile	Electrical parts	Parti elettriche
K 536		8324-800-040	Kaskade Sie. B 92945-S8154 M 473	Kascade Sie. B 92945-S8154 M 473	Moltiplicatore in cascate Sie. B 92945-S8154 M 473
oder					
K 536		8324-800-040	Kaskade Roe. BG 2087/642-1006	Kascade Roe. BG 2087/642-1006	Moltiplicatore in cascate Roe. BG 2087/642-1006

R 337	8705-265-105	22 Kohm	
R 356	8700-218-025	10 Ohm NB	(!)
R 520	8781-430-058	DR-TWS 250 Ohm	
R 521	8730-149-253	4 ST 150 Ohm	
R 523	8705-229-271	820 Ohm	(!)
R 524	8766-397-017	4,7 Ohm	(!)
R 525	8735-003-433	0,33 Ohm	(!)
R 527	8730-179-221	ZW / 6,8 Ohm	
R 528	8705-229-225	10 Ohm	(!)
R 541	8705-369-027	12 Ohm	
R 544	8730-018-979	0,12 Ohm	
R 616	8730-179-094	7,5 Kohm	
R 617	8730-179-297	10 Kohm	
R 621	8730-199-016	4,3 Ohm	(!)
R 626	8705-369-325	150 Kohm	
R 636	8730-179-041	7 ST 47 Ohm	
R 648	8750-210-049	7 W / 100 Ohm	
R 681	8735-002-422	0,22 Ohm	(!)

MOS = Vorschriften beachten
Observe mos precautions
Attenzione alle norme mos

Bauteilhinweis:
(!) Hinweis:
Bauelemente nach VDE-bzw. IEC-Richtlinien.
Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!
Notes on components (!) Cautions:
Components to VDE or IEC quidelines. Only use components with the same specification for replacement!
(!) attention:
Composants conformes aux prescriptions vde et iec. en cas de replacement n'utiliser que des compos. de memes specifications!

Pos. No.	Fig. No.	Bestell-Nr. Part No. Réf. Nr. d'ordinazioni	Benennung Description Désignation Denominazione	
D 781		8309-215-045	1 N 4148	
D 783		8309-215-045	1 N 4148	
D 786		8309-214-030	TD 190	
TY 511		8309-505-102	TP 102/E0 120 YB	
C 512		8515-909-006	0,027 uF/400 V	
C 516		8525-041-185	0,33 uF/250 V	(!)
C 517		8525-041-185	0,33 uF/250 V	(!)
C 522		8515-909-022	0,26 uF/160 V	(!)
C 528		8564-010-587	0,01 uF/1500 V	(!)
C 530		8660-097-219	220 pF	(!)
C 537		8515-909-045	0,068 uF/100 V	(!)
C 573		8515-909-031	0,36 uF/250 V	(!)
C 611		8660-097-241	3300 pF	(!)
C 613		8660-097-241	3300 pF	(!)
C 626		8443-306-055	220 uF/385 V	(!)
C 646		8525-033-487	8200 pF/400 V	(!)
C 657		8452-297-090	100 uF/250 V	(!)
C 668		8415-168-147	1000 uF/25 V	(!)
C 722		8563-731-655	0,15 uF/1000 V	(!)
C 727		8650-131-012	150 pF/2 KV	
TR 526		29201-019.10	(!)	
TR 651		29500-609.37	(!)	
L 330		8140-525-918		
L 336		8140-526-451		
L 337		8140-526-451		
L 355		8140-525-969		
L 507		8140-525-950		
L 521		29203-118.97		
L 526		09240-110.21		
L 541		29500-804.08		
L 542		29500-804.08		
L 546		09245-405.08		
L 573		09246-846.24		
L 631		29500-804.06		
L 633		8140-526-535		
L 672		8140-526-320		
IC 210		8305-201-953	CD 4053 BE (MOS)	
IC 240		8305-201-953	CD 4053 BE (MOS)	
IC 330		8305-338-442	TDA 8442	
IC 350		8305-332-820	TDA 2822	
IC 500		8305-338-140	TDA 8140	
IC 631		8305-302-459	TDA 4601	
IC 666		8305-205-765	7812 / 3 %	
IC 676		8305-205-701	78 M 05	
T 214		8303-201-548	BC 548	
T 216		8303-200-558	BC 558	
T 341		8303-201-548	BC 548	
T 502		8303-200-548	BC 548	
T 512		8303-200-558	BC 558	
T 531		8303-400-299	BF 299	
T 541		8302-260-506	BU 508 A	
T 634		8302-260-208	BU 208 A	
T 634		8302-260-903	BU 903	
T 736		8302-411-759	GF 759	
T 737		8302-200-567	BC 558 C	
oder				
T 737		8303-206-558	BC 558 C	
T 742		8302-220-422	BF 422	
oder				
T 742		8303-401-422	BF 422	
T 746		8302-220-421	BF 421	
oder				
T 746		8303-406-421	BF 421	

Pos. No.	Fig. No.	Bestell-Nr. Part No. Réf. Nr. d'ordinazioni	Benennung Description Désignation Denominazione	
R 704		8705-269-021	6,8 Ohm	(!)
R 721		8700-051-073	100 Kohm	(!)
R 724		8797-215-674	470 Kohm	
R 734		8705-329-113	47 Kohm	
R 741		8705-369-103	18 Kohm	
R 742		8700-201-069	680 Ohm NB	(!)
R 751		8790-047-135	1 Kohm	
R 754		8705-329-113	47 Kohm	
R 761		8705-369-103	18 Kohm	
R 762		8700-201-069	680 Ohm NB	(!)
R 771		8790-047-135	1 Kohm	
R 774		8705-329-113	47 Kohm	
R 781		8705-369-103	18 Kohm	
R 782		8700-201-069	680 Ohm NB	(!)
Si 644		8315-618-002	1,25 A/T	(!)
Si 661		8315-620-025	L2 2 A/T	(!)
Si 671		8315-618-025	L2 1,25 A/T	(!)
T 756		8302-411-759	GF 759	
T 762		8302-220-422	BF 422	
oder				
T 762		8303-401-422	BF 422	
T 766		8302-220-421	BF 421	
oder				
T 766		8303-406-421	BF 421	
T 776		8302-411-759	GF 759	
T 782		8302-220-422	BF 422	
oder				
T 782		8303-401-422	BF 422	
T 786		8302-220-421	BF 421	
oder				
T 786		8303-406-421	BF 421	
D 241		8309-214-218	TD 129	
D 337		8309-215-127	1 N 4007	
D 338		8309-214-010	TD 129	
D 501		8309-214-010	TD 129	
D 504		8309-215-020	1 N 4004	
D 506		8309-201-103	BA 157	
D 511		8309-720-052	ZPD 5,1	
D 515		8309-720-112	ZPD 12 C	
D 516		8309-214-010	TD 129	
D 520		8309-201-103	BA 157	
D 521		8309-201-103	BA 157	
D 522		8309-215-104	1 N 4002	
D 525		8309-201-103	BA 157	
D 527		8309-720-056	ZPD 5,6	
D 529		8309-204-268	BYV 16	
D 534		8309-215-020	1 N 4004	
D 538		8309-200-021	BAV 21	
D 539		8309-215-045	1 N 4148	
D 546		8309-204-228	BY 228	
D 547		8309-210-144	SKE 4 G 2/06	
D 616		8309-215-127	1 N 4007	
D 617		8309-720-116	ZPD 15	
D 621		8308-560-384	SKB 380/C 1500/LB5	
D 633		8309-517-032	BYW 32	
D 634		8309-215-127	1 N 4007	
D 635		8309-215-127	1 N 4007	
D 636		8309-204-268	BYV 16	
D 638		8309-201-101	BA 159	
D 647		8309-517-032	BYW 32	
D 656		8309-517-077	BYW 76	
D 661		8309-517-073	BYW 72	
D 671		8309-517-074	BYW 72	
D 681		8309-712-822	MR 824-400	
D 708		8309-707-012	ZPD 4,7	
D 737		8309-215-045	1 N 4148	
D 741		8309-215-045	1 N 4148	
D 743		8309-215-045	1 N 4148	
D 746		8309-214-030	TD 190	
D 761		8309-215-045	1 N 4148	
D 763		8309-215-045	1 N 4148	
D 766		8309-214-030	TD 190	